SEQUENCE LISTING

<110> HIRANO, Toshio

<120> EMT INDUCER

<130> C1-A0325P

<150> JP 2003-435122
<151> 2003-12-26

<160> 43

<170> PatentIn version 3.3

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Ser Leu Ala Leu Leu Trp Ala Cys Ser Val Gly Ala Gly Ser Asp Cys
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Lys Ser Val Ala Ile Glu Thr Asp Ser Arg Ile Ala Glu Gln Thr Gln
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Gln Arg His Leu Gln Ala Leu Phe Asp Lys Tyr Gly Gln Asn Gly Ser
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Ile Ser Leu Glu Gly Leu Phe Asn Leu Leu Lys Gly Val Gly Leu Asp
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Arg Ile Arg Lys Val Met Val His His Pro Gly Asn Ala His Asn His
            115   120   125

Thr His Thr His Asp His Thr His Thr His Val Asp Lys Leu Thr Ala
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His Thr His Pro Val Thr Thr Lys Lys Gly Asp Met Asp His Ser Val
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Glu Lys Ser Asp Pro Val Pro Lys Ala Gln Pro Asp Pro Ala Ser Gly
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Lys Lys Ser Gln Ser Asp Ala His His Asn Leu Tyr Met Lys Met Asn
                180   185   190

Gln Glu Ser Thr Thr Ala Leu Thr Thr Pro Ser Tyr Val Thr Arg Ser
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Arg Arg Thr Asn Arg Ser Ala Asp Tyr Asp Phe Thr Gln Asp His Ala
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Ser Phe Ser Pro Ser Gln Pro Asn Val Thr His Ser Asn His Thr His
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His Asp Glu Asp Thr Pro Thr His Gln His Asp Asp His Asp Glu His
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Glu His Ala Arg Ala Ser Leu Gly Cys Gln Asn Ala Ser Thr Ile Leu
        260   265   270

Gln Thr His Gly Met Arg Lys Glu Ala Ser Leu Ser Val Lys Asp Phe
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Ser Phe Leu Cys Pro Ala Leu Leu Met Gln Ile Asp Ser Lys Ser Cys
    290   295   300

Ile Val His Glu Asp Glu Asp Glu His Ser Asp His Ser His His His
305   310   315   320

Lys His His His His His His Asp His Gln His Leu Gln His Pro His
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Asn His Thr Asn Gly Arg Gly Gln Arg Asn Thr Pro Val Tyr Ile Ala
          340   345   350

Trp Leu Gly Gly Phe Leu Ser Ile Thr Leu Ile Ser Leu Leu Ala Leu
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Leu Leu Ser Phe Leu Val Ala Leu Ala Val Gly Thr Leu Ser Gly Asp
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His Ser Glu Glu His Ala Glu Glu Glu Asp Ser Leu Arg Pro Val Trp
                420   425   430

Thr Gly Leu Thr Ala Leu Ser Gly Val Tyr Ile Met Phe Leu Ile Glu
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His Phe Leu Thr Leu Gly Lys Met Tyr Lys Asp Lys Asn Gln Lys Val
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Gln Lys Arg Val Asp Leu Thr Thr Glu Val Leu Glu Ser Glu Lys Leu
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Pro Ser Leu Glu Glu Asn Asp Val Lys Ile Glu Ala Ala Glu Thr Asn
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Gly Gly Arg Ala Leu Ala Glu Glu Glu Glu Val Met Leu Gly Ala Glu
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Leu Tyr Asn Asp Ile Asp Cys Glu Asn Lys Cys His Ser His Phe His
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Asp Thr Val Gly Gln Ser Asp Glu Gln His His His His His Asp Tyr
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His Thr His Arg His Thr His Ser Tyr Ser Gln Gln His Phe Glu Gln
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Ala Gly Val Ala Thr Leu Ala Trp Met Val Ile Met Gly Asp Gly Leu
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His Asn Phe Ser Asp Gly Leu Ala Ile Gly Ala Ala Phe Thr Glu Gly
        595   600   605

Leu Ser Ser Gly Leu Ser Thr Ser Val Ala Val Phe Cys His Glu Leu
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Pro His Glu Leu Gly Asp Phe Ala Val Leu Leu Lys Ala Gly Met Ser
625   630   635   640

Val Arg Gln Ala Met Leu Tyr Asn Leu Leu Ser Ala Leu Met Gly Tyr
            645   650   655

Leu Gly Met Ile Ile Gly Ile Leu Ile Gly His Tyr Ala Glu Asn Val
            660   665   670

Ala Thr Trp Ile Phe Ala Leu Thr Ala Gly Leu Phe Met Tyr Val Ala
            675   680   685

Leu Val Asp Met Val Pro Glu Met Leu His Asn Asp Ala Ser Glu Ala
        690   695   700

Gly Phe Ser His Tyr Gly Phe Phe Leu Leu Gln Asn Ala Gly Ile Leu
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Gln Leu Asp Leu Gly Tyr
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Thr Glu Lys Ile Ser Pro Asn Trp Glu Ser Gly Ile Asn Val Asp Leu
            35   40   45

Ala Ile Ser Thr Arg Gln Tyr His Leu Gln Gln Leu Phe Tyr Arg Tyr
    50   55   60

Gly Glu Asn Asn Ser Leu Ser Val Glu Gly Phe Arg Lys Leu Leu Gln
65   70   75   80

Asn Ile Gly Ile Asp Lys Ile Lys Arg Ile His Ile His His Asp His
                85   90   95

Asp His His Ser Asp His Glu His His Ser Asp His Glu Arg His Ser
            100   105   110

Asp His Glu His His Ser Asp His Glu His His Ser Asp His Asn His
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Ala Ala Ser Gly Lys Asn Lys Arg Lys Ala Leu Cys Pro Asp His Asp
    130   135   140

Ser Asp Ser Ser Gly Lys Asp Pro Arg Asn Ser Gln Gly Lys Gly Ala
145   150   155   160

His Arg Pro Glu His Ala Ser Gly Arg Arg Asn Val Lys Asp Ser Val
           165   170   175

Ser Ala Ser Glu Val Thr Ser Thr Val Tyr Asn Thr Val Ser Glu Gly
           180   185   190

Thr His Phe Leu Glu Thr Ile Glu Thr Pro Arg Pro Gly Lys Leu Phe
       195   200   205

Pro Lys Asp Val Ser Ser Ser Thr Pro Pro Ser Val Thr Ser Lys Ser
    210   215   220

Arg Val Ser Arg Leu Ala Gly Arg Lys Thr Asn Glu Ser Val Ser Glu
225   230   235   240

Pro Arg Lys Gly Phe Met Tyr Ser Arg Asn Thr Asn Glu Asn Pro Gln
           245   250   255

Glu Cys Phe Asn Ala Ser Lys Leu Leu Thr Ser His Gly Met Gly Ile
           260   265   270

Gln Val Pro Leu Asn Ala Thr Glu Phe Asn Tyr Leu Cys Pro Ala Ile
           275   280   285

Ile Asn Gln Ile Asp Ala Arg Ser Cys Leu Ile His Thr Ser Glu Lys
   290   295   300

Lys Ala Glu Ile Pro Pro Lys Thr Tyr Ser Leu Gln Ile Ala Trp Val
305   310   315   320

Gly Gly Phe Ile Ala Ile Ser Ile Ile Ser Phe Leu Ser Leu Leu Gly
        325   330   335

Val Ile Leu Val Pro Leu Met Asn Arg Val Phe Phe Lys Phe Leu Leu
        340   345   350

Ser Phe Leu Val Ala Leu Ala Val Gly Thr Leu Ser Gly Asp Ala Phe
        355   360   365

Leu His Leu Leu Pro His Ser His Ala Ser His His His Ser His Ser
   370   375   380

His Glu Glu Pro Ala Met Glu Met Lys Arg Gly Pro Leu Phe Ser His
385   390   395   400

Leu Ser Ser Gln Asn Ile Glu Glu Ser Ala Tyr Phe Asp Ser Thr Trp
        405   410   415

Lys Gly Leu Thr Ala Leu Gly Gly Leu Tyr Phe Met Phe Leu Val Glu
        420   425   430

His Val Leu Thr Leu Ile Lys Gln Phe Lys Asp Lys Lys Lys Asn
     435   440   445

Gln Lys Lys Pro Glu Asn Asp Asp Asp Val Glu Ile Lys Lys Gln Leu
     450   455   460

Ser Lys Tyr Glu Ser Gln Leu Ser Thr Asn Glu Glu Lys Val Asp Thr
465   470   475   480

Asp Asp Arg Thr Glu Gly Tyr Leu Arg Ala Asp Ser Gln Glu Pro Ser
         485   490   495

His Phe Asp Ser Gln Gln Pro Ala Val Leu Glu Glu Glu Glu Val Met
     500   505   510

Ile Ala His Ala His Pro Gln Glu Val Tyr Asn Glu Tyr Val Pro Arg
     515   520   525

Gly Cys Lys Asn Lys Cys His Ser His Phe His Asp Thr Leu Gly Gln
     530   535   540

Ser Asp Asp Leu Ile His His His His Asp Tyr His His Ile Leu His
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His His His His Gln Asn His His Pro His Ser His Ser Gln Arg Tyr
     565   570   575

Ser Arg Glu Glu Leu Lys Asp Ala Gly Val Ala Thr Leu Ala Trp Met
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Val Ile Met Gly Asp Gly Leu His Asn Phe Ser Asp Gly Leu Ala Ile
          595   600   605

Gly Ala Ala Phe Thr Glu Gly Leu Ser Ser Gly Leu Ser Thr Ser Val
     610   615   620

Ala Val Phe Cys His Glu Leu Pro His Glu Leu Gly Asp Phe Ala Val
625   630   635   640

Leu Leu Lys Ala Gly Met Thr Val Lys Gln Ala Val Leu Tyr Asn Ala
               645   650   655

Leu Ser Ala Met Leu Ala Tyr Leu Gly Met Ala Thr Gly Ile Phe Ile
               660   665   670

Gly His Tyr Ala Glu Asn Val Ser Met Trp Ile Phe Ala Leu Thr Ala
          675   680   685

Gly Leu Phe Met Tyr Val Ala Leu Val Asp Met Val Pro Glu Met Leu
     690   695   700

His Asn Asp Ala Ser Asp His Gly Cys Ser Arg Trp Gly Tyr Phe Phe
705   710   715   720

Leu Gln Asn Ala Gly Met Leu Leu Gly Phe Gly Ile Met Leu Leu Ile
          725   730   735

Ser Ile Phe Glu His Lys Ile Val Phe Arg Ile Asn Phe
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Phe Ala Val Leu Leu Lys Ala Gly Met Ser
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1   5   10   15

Leu Ala Ile Gly Ala Ala Phe Thr Glu Gly Leu Ser Ser Gly Leu Ser
     20   25   30

Thr Ser Val Ala Val Phe Cys His Glu Leu Pro His Glu Leu Gly Asp
     35   40   45

Phe Ala Val Leu Leu Lys Ala Gly Met Thr
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1   5   10   15

Leu Ala Ile Gly Ala Ala Phe Ser Ala Gly Leu Thr Gly Gly Ile Ser
                20   25   30

Thr Ser Ile Ala Val Phe Cys His Glu Leu Pro His Glu Leu Gly Asp
                35   40   45

Phe Ala Val Leu Leu Lys Ala Gly Met Thr
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<210> 18
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<213> Homo sapiens

<400> 18

Thr Trp Met Val Leu Leu Gly Asp Gly Leu His Asn Leu Thr Asp Gly
1   5   10   15

Leu Ala Ile Gly Ala Ala Phe Ser Asp Gly Phe Ser Ala Gly Leu Ser
                20   25   30

Thr Thr Leu Ala Val Phe Cys His Glu Leu Pro His Glu Leu Gly Asp

35   40   45

Phe Ala Met Leu Leu Gln Ser Gly Leu Ser
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1   5   10   15

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       20   25   30

Thr Ser Leu Ala Val Phe Cys His Glu Leu Pro His Glu Leu Gly Asp
     35   40   45

Phe Ala Ala Leu Leu His Ala Gly Leu Ser
   50   55

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1   5   10   15

Leu Ala Ile Gly Ala Ala Phe Ser Ser Ser Ser Glu Ser Gly Val Thr
            20   25   30

Thr Thr Ile Ala Ile Leu Cys His Glu Ile Pro His Glu Met Gly Asp
            35   40   45

Phe Ala Val Leu Leu Ser Ser Gly Leu Ser
        50   55

<210> 21
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Ala Trp Met Ile Thr Leu Cys Asp Ala Leu His Asn Phe Ile Asp Gly
1   5   10   15

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            20   25   30

Thr Ser Ile Ala Ile Leu Cys Glu Glu Phe Pro His Glu Leu Gly Asp
            35   40   45

Phe Val Ile Leu Leu Asn Ala Gly Met Ser
    50   55

<210> 22
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<213> Homo sapiens

<400> 22

Ala Trp Met Ile Thr Leu Ser Asp Gly Leu His Asn Phe Ile Asp Gly
1   5   10   15

Leu Ala Ile Gly Ala Ser Phe Thr Val Ser Val Phe Gln Gly Ile Ser
          20   25   30

Thr Ser Val Ala Ile Leu Cys Glu Glu Phe Pro His Glu Leu Gly Asp
          35   40   45

Phe Val Ile Leu Leu Asn Ala Gly Met Ser
    50   55

<210> 23
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<213> Homo sapiens

<400> 23

Gly Tyr Leu Asn Leu Leu Ala Asn Thr Ile Asp Asn Phe Thr His Gly
1   5   10   15

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          20   25   30

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           35   40   45

Phe Ala Ile Leu Val Gln Ser Gly Cys Ser
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<210> 24
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<400> 24

Gly Tyr Leu Asn Leu Ala Ala Asp Leu Ala His Asn Phe Thr Asp Gly
1   5   10   15

Leu Ala Ile Gly Ala Ser Phe Arg Gly Gly Arg Gly Leu Gly Ile Leu
          20   25   30

Thr Thr Met Thr Val Leu Leu His Glu Val Pro His Glu Val Gly Asp
           35   40   45

Phe Ala Ile Leu Leu Arg Ala Gly Phe Asp
      50   55

<210> 25
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<213> Homo sapiens

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<222> (56)..(1465)

<400> 25
gcgggactgc cacgtccaag caaaccggga aaggagagga tcccggagcc gcgtg atg   58
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gcc aga ggc ctg ggg gcc ccc cac tgg gtg gcc gtg gga ctg ctg acc   106
Ala Arg Gly Leu Gly Ala Pro His Trp Val Ala Val Gly Leu Leu Thr
            5   10   15

tgg gcg acc ttg ggg ctt ctg gtg gct gga ctc ggg ggt cat gac gac   154
Trp Ala Thr Leu Gly Leu Leu Val Ala Gly Leu Gly Gly His Asp Asp
            20   25   30

ctg cac gac gat ctg caa gag gac ttc cat ggc cac agc cac agg cac   202
Leu His Asp Asp Leu Gln Glu Asp Phe His Gly His Ser His Arg His
        35   40   45

tca cat gaa gat ttc cac cat ggc cac agc cat gcc cat ggc cat ggc   250
Ser His Glu Asp Phe His His Gly His Ser His Ala His Gly His Gly
50   55   60   65

cac act cac gag agc atc tgg cat gga cat acc cac gat cac gac cat   298
His Thr His Glu Ser Ile Trp His Gly His Thr His Asp His Asp His
                70   75   80

gga cat tca cat gag gat tta cac cat ggc cat agc cat ggc tac tcc   346
Gly His Ser His Glu Asp Leu His His Gly His Ser His Gly Tyr Ser
        85   90   95

cat gag agc ctc tac cac aga gga cat gga cat gac cat gag cat agc   394
His Glu Ser Leu Tyr His Arg Gly His Gly His Asp His Glu His Ser
        100   105   110

cat gga ggc tat ggg gag tct ggg gct cca ggc atc aag cag gac ctg   442
His Gly Gly Tyr Gly Glu Ser Gly Ala Pro Gly Ile Lys Gln Asp Leu
        115   120   125

gat gct gtc act ctc tgg gct tat gca ctg ggg gcc aca gtg ctg atc   490
Asp Ala Val Thr Leu Trp Ala Tyr Ala Leu Gly Ala Thr Val Leu Ile
130   135   140   145

tca gca gct cca ttt ttt gtc ctc ttc ctt atc ccc gtg gag tcg aac   538
Ser Ala Ala Pro Phe Phe Val Leu Phe Leu Ile Pro Val Glu Ser Asn
        150   155   160

tct ccc cgg cat cgc tct cta ctt cag atc ttg ctc agt ttt gct tcc   586
Ser Pro Arg His Arg Ser Leu Leu Gln Ile Leu Leu Ser Phe Ala Ser
        165   170   175

ggt ggg ctc ctg gga gat gct ttc ctg cac ctc att cct cat gct ctt   634
Gly Gly Leu Leu Gly Asp Ala Phe Leu His Leu Ile Pro His Ala Leu
        180   185   190

gaa cct cat tct cac cac act ctg gag caa ccc gga cat gga cac tcc   682
Glu Pro His Ser His His Thr Leu Glu Gln Pro Gly His Gly His Ser
        195   200   205

cac agt ggc cag ggc ccc att ctg tct gtg gga ctg tgg gtt ctc agt   730
His Ser Gly Gln Gly Pro Ile Leu Ser Val Gly Leu Trp Val Leu Ser
210   215   220   225

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gga att gtt gcc ttt ctt gtc gtg gag aaa ttt gtg aga cat gtg aaa        778
Gly Ile Val Ala Phe Leu Val Val Glu Lys Phe Val Arg His Val Lys
                230                 235                 240


gga gga cat ggt cac agt cat gga cat gga cac gct cac agt cat aca        826
Gly Gly His Gly His Ser His Gly His Gly His Ala His Ser His Thr
                245                 250                 255


cgt gga agt cat gga cat gga aga caa gag cgt tct acc aag gag aag        874
Arg Gly Ser His Gly His Gly Arg Gln Glu Arg Ser Thr Lys Glu Lys
                260                 265                 270


cag agc tca gag gaa gaa gaa aag gaa aca aga ggg gtt cag aag agg        922
Gln Ser Ser Glu Glu Glu Glu Lys Glu Thr Arg Gly Val Gln Lys Arg
                275                 280                 285


cga gga ggg agc aca gta ccc aaa gat ggg cca gtg aga cct cag aac        970
Arg Gly Gly Ser Thr Val Pro Lys Asp Gly Pro Val Arg Pro Gln Asn
290                 295                 300                 305


gct gaa gaa gaa aaa aga ggc tta gac ctg cgt gtg tcg ggg tac ctg       1018
Ala Glu Glu Glu Lys Arg Gly Leu Asp Leu Arg Val Ser Gly Tyr Leu
                310                 315                 320


aat ctg gct gct gac ttg gca cac aac ttc act gat ggt ctg gcc att       1066
Asn Leu Ala Ala Asp Leu Ala His Asn Phe Thr Asp Gly Leu Ala Ile
                325                 330                 335


ggg gct tcc ttt cga ggg ggc cgg gga cta ggg atc ctg acc aca atg       1114
Gly Ala Ser Phe Arg Gly Gly Arg Gly Leu Gly Ile Leu Thr Thr Met
                340                 345                 350


act gtc ctg cta cat gaa gtg ccc cac gag gtc gga gac ttt gcc atc       1162
Thr Val Leu Leu His Glu Val Pro His Glu Val Gly Asp Phe Ala Ile
                355                 360                 365
```

ttg gtc cag tct ggc tgc agc aaa aag cag gcg atg cgt ctg caa cta   1210
Leu Val Gln Ser Gly Cys Ser Lys Lys Gln Ala Met Arg Leu Gln Leu
370   375   380   385

ctg aca gca gta ggg gca ctg gca ggc aca gcc tgt gcc ctt ctc act   1258
Leu Thr Ala Val Gly Ala Leu Ala Gly Thr Ala Cys Ala Leu Leu Thr
            390   395   400

gaa gga gga gca gtg ggc agt gaa att gca ggt ggt gca ggt cct ggc   1306
Glu Gly Gly Ala Val Gly Ser Glu Ile Ala Gly Gly Ala Gly Pro Gly
            405   410   415

tgg gtc ctg cca ttt act gca ggt ggc ttt atc tac gta gca aca gtg   1354
Trp Val Leu Pro Phe Thr Ala Gly Gly Phe Ile Tyr Val Ala Thr Val
            420   425   430

tct gtg ttg ccc gag ctg ctg agg gag gca tca cca ttg caa tca ctt   1402
Ser Val Leu Pro Glu Leu Leu Arg Glu Ala Ser Pro Leu Gln Ser Leu
    435   440   445

ctg gag gtg ctg ggg ctg ctg ggg gga gtt atc atg atg gtg ctg att   1450
Leu Glu Val Leu Gly Leu Leu Gly Gly Val Ile Met Met Val Leu Ile
450   455   460   465

gcc cac ctt gag tga ggggtggata aactacccct gccccaaacc tctaccccta   1505
Ala His Leu Glu

actccaggtc aggggtgcgt agaggttggg ggccctggcc agggacatct gccaaaggaa   1565

ggaactgtag cctgggagaa tggttacttt ggcattaggg ccttcaaggg ctggcagtct   1625

tacagaggct ggagcggtga gaatgagagg ccagagggac catagtgttg ggcactgtct   1685

gaccatgttg catttggaag gctaaatggg gccatgaaga aggctggaag ggacaggggg   1745

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tgatggcagc ctacctggtg tcccctaccc cacctgttct cggagaacca agttgctaca     1805

caggaagttc tccaaggtcc agtttccttt ctcccaccag ttggtggagg cttcagggaa     1865

gaccagagtc ctggacagag agggtaacag gaggagtcgg ggataaacat caaacatcaa     1925

tcgtgtgtcc tgatttggga gtgattgggg ggatggggtg ggagagggtt agttggtatt     1985

ctcatggcct gatttttttt gtttctattc cttttatatc actgtgtttg aatcgagggg     2045

gaggggtggt aaccggaaat aaagacctcc gatcttccgc cccaaaaaaa aaaaaaaaaa     2105

aaaaa                                                                2110
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<210> 26
<211> 469
<212> PRT
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<400> 26

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1               5                   10                  15


Thr Trp Ala Thr Leu Gly Leu Leu Val Ala Gly Leu Gly Gly His Asp
                20                  25                  30


Asp Leu His Asp Asp Leu Gln Glu Asp Phe His Gly His Ser His Arg
            35                  40                  45


His Ser His Glu Asp Phe His His Gly His Ser His Ala His Gly His
        50                  55                  60
```

Gly His Thr His Glu Ser Ile Trp His Gly His Thr His Asp His Asp
65   70   75   80

His Gly His Ser His Glu Asp Leu His His Gly His Ser His Gly Tyr
        85   90   95

Ser His Glu Ser Leu Tyr His Arg Gly His Gly His Asp His Glu His
        100   105   110

Ser His Gly Gly Tyr Gly Glu Ser Gly Ala Pro Gly Ile Lys Gln Asp
        115   120   125

Leu Asp Ala Val Thr Leu Trp Ala Tyr Ala Leu Gly Ala Thr Val Leu
        130   135   140

Ile Ser Ala Ala Pro Phe Phe Val Leu Phe Leu Ile Pro Val Glu Ser
145   150   155   160

Asn Ser Pro Arg His Arg Ser Leu Leu Gln Ile Leu Leu Ser Phe Ala
            165   170   175

Ser Gly Gly Leu Leu Gly Asp Ala Phe Leu His Leu Ile Pro His Ala
        180   185   190

Leu Glu Pro His Ser His His Thr Leu Glu Gln Pro Gly His Gly His
        195   200   205

Ser His Ser Gly Gln Gly Pro Ile Leu Ser Val Gly Leu Trp Val Leu
   210   215   220

Ser Gly Ile Val Ala Phe Leu Val Val Glu Lys Phe Val Arg His Val
225   230   235   240

Lys Gly Gly His Gly His Ser His Gly His Gly His Ala His Ser His
         245   250   255

Thr Arg Gly Ser His Gly His Gly Arg Gln Glu Arg Ser Thr Lys Glu
       260   265   270

Lys Gln Ser Ser Glu Glu Glu Glu Lys Glu Thr Arg Gly Val Gln Lys
       275   280   285

Arg Arg Gly Gly Ser Thr Val Pro Lys Asp Gly Pro Val Arg Pro Gln
       290   295   300

Asn Ala Glu Glu Glu Lys Arg Gly Leu Asp Leu Arg Val Ser Gly Tyr
305   310   315   320

Leu Asn Leu Ala Ala Asp Leu Ala His Asn Phe Thr Asp Gly Leu Ala
         325   330   335

Ile Gly Ala Ser Phe Arg Gly Gly Arg Gly Leu Gly Ile Leu Thr Thr
       340   345   350

Met Thr Val Leu Leu His Glu Val Pro His Glu Val Gly Asp Phe Ala
        355   360   365

Ile Leu Val Gln Ser Gly Cys Ser Lys Lys Gln Ala Met Arg Leu Gln
        370   375   380

Leu Leu Thr Ala Val Gly Ala Leu Ala Gly Thr Ala Cys Ala Leu Leu
385   390   395   400

Thr Glu Gly Gly Ala Val Gly Ser Glu Ile Ala Gly Gly Ala Gly Pro
                405   410   415

Gly Trp Val Leu Pro Phe Thr Ala Gly Gly Phe Ile Tyr Val Ala Thr
                420   425   430

Val Ser Val Leu Pro Glu Leu Leu Arg Glu Ala Ser Pro Leu Gln Ser
        435   440   445

Leu Leu Glu Val Leu Gly Leu Leu Gly Gly Val Ile Met Met Val Leu
        450   455   460

Ile Ala His Leu Glu
465

<210> 27
<211> 5231

<212> DNA

<213> Homo sapiens

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<221> CDS

<222> (79)..(2574)

<400> 27

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gtgtgaggaa aaatagaa atg aag gta cat atg cac aca aaa ttt tgc ctc         111
                    Met Lys Val His Met His Thr Lys Phe Cys Leu
                     1               5                  10

att tgt ttg ctg aca ttt att ttt cat cat tgc aac cat tgc cat gaa        159
Ile Cys Leu Leu Thr Phe Ile Phe His His Cys Asn His Cys His Glu
             15              20              25

gaa cat gac cat ggc cct gaa gcg ctt cac aga cag cat cgt gga atg        207
Glu His Asp His Gly Pro Glu Ala Leu His Arg Gln His Arg Gly Met
         30              35              40

aca gaa ttg gag cca agc aaa ttt tca aag caa gct gct gaa aat gaa        255
Thr Glu Leu Glu Pro Ser Lys Phe Ser Lys Gln Ala Ala Glu Asn Glu
     45              50              55

aaa aaa tac tat att gaa aaa ctt ttt gag cgt tat ggt gaa aat gga        303
Lys Lys Tyr Tyr Ile Glu Lys Leu Phe Glu Arg Tyr Gly Glu Asn Gly
60              65              70              75

aga tta tcc ttt ttt ggt ttg gag aaa ctt tta aca aac ttg ggc ctt        351
Arg Leu Ser Phe Phe Gly Leu Glu Lys Leu Leu Thr Asn Leu Gly Leu
                 80              85              90

gga gag aga aaa gta gtt gag att aat cat gag gat ctt ggc cac gat        399
```

```
Gly Glu Arg Lys Val Val Glu Ile Asn His Glu Asp Leu Gly His Asp
            95                  100                 105

cat gtt tct cat tta gat att ttg gca gtt caa gag gga aag cat ttt      447
His Val Ser His Leu Asp Ile Leu Ala Val Gln Glu Gly Lys His Phe
            110                 115                 120

cac tca cat aac cac cag cat tcc cat aat cat tta aat tca gaa aat      495
His Ser His Asn His Gln His Ser His Asn His Leu Asn Ser Glu Asn
            125                 130                 135

caa act gtg acc agt gta tcc aca aaa aga aac cat aaa tgt gat cca      543
Gln Thr Val Thr Ser Val Ser Thr Lys Arg Asn His Lys Cys Asp Pro
140                 145                 150                 155

gag aaa gag aca gtt gaa gtg tct gta aaa tct gat gat aaa cat atg      591
Glu Lys Glu Thr Val Glu Val Ser Val Lys Ser Asp Asp Lys His Met
                160                 165                 170

cat gac cat aat cac cgc cta cgt cat cac cat cgt ttg cat cat cat      639
His Asp His Asn His Arg Leu Arg His His His Arg Leu His His His
                175                 180                 185

ctt gat cat aac aac act cac cat ttt cat aat gat tcc att act ccc      687
Leu Asp His Asn Asn Thr His His Phe His Asn Asp Ser Ile Thr Pro
            190                 195                 200

agt gag cgt ggg gag cct agc aat gaa cct tca aca gag acc aat aaa      735
Ser Glu Arg Gly Glu Pro Ser Asn Glu Pro Ser Thr Glu Thr Asn Lys
            205                 210                 215

acc cag gaa caa tct gat gtt aaa cta ccg aaa gga aag agg aag aaa      783
Thr Gln Glu Gln Ser Asp Val Lys Leu Pro Lys Gly Lys Arg Lys Lys
220                 225                 230                 235

aaa ggg agg aaa agt aat gaa aat tct gag gtt att aca cca ggt ttt      831
```

Lys Gly Arg Lys Ser Asn Glu Asn Ser Glu Val Ile Thr Pro Gly Phe
            240   245   250

ccc cct aac cat gat cag ggt gaa cag tat gag cat aat cgg gtc cac   879
Pro Pro Asn His Asp Gln Gly Glu Gln Tyr Glu His Asn Arg Val His
            255   260   265

aaa cct gat cgt gta cat aac cca ggt cat tct cat gta cat ctt cca   927
Lys Pro Asp Arg Val His Asn Pro Gly His Ser His Val His Leu Pro
            270   275   280

gaa cgt aat ggt cat gat cct ggt cgt gga cac caa gat ctt gat cct   975
Glu Arg Asn Gly His Asp Pro Gly Arg Gly His Gln Asp Leu Asp Pro
            285   290   295

gat aat gaa ggt gaa ctt cga cat act aga aag aga gaa gca cca cat   1023
Asp Asn Glu Gly Glu Leu Arg His Thr Arg Lys Arg Glu Ala Pro His
300   305   310   315

gtt aaa aat aat gca ata att tct ttg aga aaa gat cta aat gaa gat   1071
Val Lys Asn Asn Ala Ile Ile Ser Leu Arg Lys Asp Leu Asn Glu Asp
            320   325   330

gac cat cat cat gaa tgt ttg aac gtc act cag tta tta aaa tac tat   1119
Asp His His His Glu Cys Leu Asn Val Thr Gln Leu Leu Lys Tyr Tyr
            335   340   345

ggt cat ggt gcc aac tct ccc atc tca act gat tta ttt aca tac ctt   1167
Gly His Gly Ala Asn Ser Pro Ile Ser Thr Asp Leu Phe Thr Tyr Leu
            350   355   360

tgc cct gca ttg tta tat caa atc gac agc aga ctt tgt att gag cat   1215
Cys Pro Ala Leu Leu Tyr Gln Ile Asp Ser Arg Leu Cys Ile Glu His
            365   370   375

ttt gac aaa ctt tta gtt gaa gat ata aat aag gat aaa aac ctg gtt   1263

```
                Phe Asp Lys Leu Leu Val Glu Asp Ile Asn Lys Asp Lys Asn Leu Val
                380                 385             390             395

                cct gaa gat gag gca aat ata ggg gca tca gcc tgg att tgt ggt atc     1311
                Pro Glu Asp Glu Ala Asn Ile Gly Ala Ser Ala Trp Ile Cys Gly Ile
                                400                 405             410

                att tct atc act gtc att agc ctg ctt tcc ttg cta ggc gtg atc ttg     1359
                Ile Ser Ile Thr Val Ile Ser Leu Leu Ser Leu Leu Gly Val Ile Leu
                                415                 420             425

                gtt cct atc att aac caa gga tgc ttc aaa ttc ctt ctt aca ttc ctt     1407
                Val Pro Ile Ile Asn Gln Gly Cys Phe Lys Phe Leu Leu Thr Phe Leu
                                430                 435             440

                gtt gca tta gct gta gga aca atg agt gga gac gcc ctt ctt cat cta     1455
                Val Ala Leu Ala Val Gly Thr Met Ser Gly Asp Ala Leu Leu His Leu
                                445                 450             455

                ctg ccc cat tct cag ggt gga cat gat cac agt cac caa cat gca cat     1503
                Leu Pro His Ser Gln Gly Gly His Asp His Ser His Gln His Ala His
                460                 465                 470             475

                ggg cat gga cat tct cat gga cat gaa tct aac aag ttt ttg gaa gaa     1551
                Gly His Gly His Ser His Gly His Glu Ser Asn Lys Phe Leu Glu Glu
                                480                 485             490

                tat gat gct gta ttg aaa gga ctt gtt gct cta gga ggc att tac ttg     1599
                Tyr Asp Ala Val Leu Lys Gly Leu Val Ala Leu Gly Gly Ile Tyr Leu
                                495                 500             505

                cta ttt atc att gaa cac tgc att aga atg ttt aag cac tac aaa caa     1647
                Leu Phe Ile Ile Glu His Cys Ile Arg Met Phe Lys His Tyr Lys Gln
                                510                 515             520

                caa aga gga aaa cag aaa tgg ttt atg aaa cag aac aca gaa gaa tca     1695
```

```
Gln Arg Gly Lys Gln Lys Trp Phe Met Lys Gln Asn Thr Glu Glu Ser
    525             530             535
```

```
act att gga aga aag ctt tca gat cac aag tta aac aat aca cca gat        1743
Thr Ile Gly Arg Lys Leu Ser Asp His Lys Leu Asn Asn Thr Pro Asp
540             545             550             555
```

```
tct gac tgg ctt caa ctc aag cct ctt gcc gga act gat gac tcg gtt        1791
Ser Asp Trp Leu Gln Leu Lys Pro Leu Ala Gly Thr Asp Asp Ser Val
                560             565                 570
```

```
gtt tct gaa gat cga ctt aat gaa act gaa ctg aca gat tta gaa ggc        1839
Val Ser Glu Asp Arg Leu Asn Glu Thr Glu Leu Thr Asp Leu Glu Gly
                575             580             585
```

```
caa caa gaa tcc cct cct aaa aat tac ctt tgt ata gaa gag gag aaa        1887
Gln Gln Glu Ser Pro Pro Lys Asn Tyr Leu Cys Ile Glu Glu Glu Lys
                590             595             600
```

```
atc ata gac cat tct cac agt gat gga tta cat acc att cat gag cat        1935
Ile Ile Asp His Ser His Ser Asp Gly Leu His Thr Ile His Glu His
                605             610             615
```

```
gat ctc cat gct gct gca cat aac cac cac ggc gag aac aaa act gtg        1983
Asp Leu His Ala Ala Ala His Asn His His Gly Glu Asn Lys Thr Val
620             625             630                 635
```

```
ctg agg aag cat aat cac cag tgg cac cac aag cat tct cat cat tcc        2031
Leu Arg Lys His Asn His Gln Trp His His Lys His Ser His His Ser
                640             645             650
```

```
cat ggc ccc tgt cat tct gga tcc gat ctg aaa gaa aca gga ata gct        2079
His Gly Pro Cys His Ser Gly Ser Asp Leu Lys Glu Thr Gly Ile Ala
                655             660             665
```

```
aat ata gcc tgg atg gtg atc atg ggg gat ggc atc cac aac ttc agt        2127
```

```
Asn Ile Ala Trp Met Val Ile Met Gly Asp Gly Ile His Asn Phe Ser
        670             675             680


gat ggg ctc gca att ggt gca gct ttc agt gct gga ttg aca gga gga      2175
Asp Gly Leu Ala Ile Gly Ala Ala Phe Ser Ala Gly Leu Thr Gly Gly
        685             690             695


atc agt act tct ata gcc gtc ttc tgt cat gaa ctg cca cat gaa tta      2223
Ile Ser Thr Ser Ile Ala Val Phe Cys His Glu Leu Pro His Glu Leu
700             705             710             715


gga gat ttt gca gtt ctt ctt aaa gca ggc atg act gta aag caa gca      2271
Gly Asp Phe Ala Val Leu Leu Lys Ala Gly Met Thr Val Lys Gln Ala
                720             725             730


att gta tac aac ctc ctc tct gcc atg atg gct tac ata ggc atg ctc      2319
Ile Val Tyr Asn Leu Leu Ser Ala Met Met Ala Tyr Ile Gly Met Leu
                735             740             745


ata ggc aca gct gtt ggt cag tat gcc aat aac atc aca ctt tgg atc      2367
Ile Gly Thr Ala Val Gly Gln Tyr Ala Asn Asn Ile Thr Leu Trp Ile
                750             755             760


ttt gca gtc act gca ggc atg ttc ctc tat gta gcc ttg gtg gat atg      2415
Phe Ala Val Thr Ala Gly Met Phe Leu Tyr Val Ala Leu Val Asp Met
        765             770             775


ctt cca gaa atg ttg cat ggt gat ggt gac aat gaa gaa cat ggc ttt      2463
Leu Pro Glu Met Leu His Gly Asp Gly Asp Asn Glu Glu His Gly Phe
780             785             790             795


tgt cct gtg ggg caa ttc atc ctt cag aat tta gga ttg ctc ttt gga      2511
Cys Pro Val Gly Gln Phe Ile Leu Gln Asn Leu Gly Leu Leu Phe Gly
                800             805             810


ttt gcc att atg ctg gtg att gcc ctc tat gaa gat aaa att gtg ttt      2559
```

```
Phe Ala Ile Met Leu Val Ile Ala Leu Tyr Glu Asp Lys Ile Val Phe
            815                820                825
```

```
gac atc cag ttt tga cctttcccag taatcactgt tgattacgag aatgttacca      2614
Asp Ile Gln Phe
            830
```

```
tgcagctttg catctgttcc ttgtactgta tgcacattgc tcaaaggaaa gtcagtggct     2674

tgcactactt acaagtttca tagatttgag cctaaccaca agaggctggt gcttagtact     2734

gttttccctg cacgtagggg tcttttaaaa atataaagct tgtgataaag agaggagaat     2794

atgggactcc atgaaccagt gttgatatgt ttgattaaga cttttcacaa aataatcata     2854

taaaacacta gtctctttat tagtagaaac ttctgtggct atgcagaaat agagatcgaa     2914

ccaaaaaaaa tcatttaaac tttaaaaata ttttaaatgg actttgggga gacatttttt     2974

gtgtgtttta agaatgaatt gtagtgctct ttaattcagc tacatatatt catgtggtga     3034

tagggatcaa cttgacacaa ctttgaaact gcataaagta gacataggaa ctagaggaaa     3094

gctcaggctg cattagagta tgaatttagc attgggaaaa gcccttattc ttgaatctag     3154

agttactatt tttgtatata tttgcatagt gtttaaacct gcagcctaaa ctactgaaat     3214

ttgtgattgt atgtttgtgt gagcttcagt ttaatgaaag attcataatg gttctttgta     3274

ttattataat acttggtgtt ggggtgttct ttctgttttg tttttttactt taattttgtt    3334

ttgattttt ttttttttt tttggcgggg gtaggtgagg gtttggagca tgtggtcttt      3394

ttaaaaaatt gtaaccctct agaaaatatc aaagaaatga accagacgtg gtttaaatag     3454

ttgattttcc tattttaaca gtaccaacta gttaattggg aaatgtaagt tctgaatgtt     3514
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cacattgctt taccagtttg gcactggaac caagagcaca tgtcgtggct ggctacaagg    3574

ttgtaaagca gaaaatcgaa gtttaccatg tctgtaatgt gtacatgaag tgtcaattta    3634

gaacagttac taggataaac tccattattg ccatggctgt catggtaccc aagtgacttg    3694

gaagatgcat ttaaattact cagctgaaat cacttgatca tcttgtgcca agatatgctg    3754

ttggtgcctg atagggatta gtcttttagg tgccctgttc tcctaccata attgtgaatg    3814

atttgtgaga agtgcaagcc atgtttatcc tgaattttta cttaataatt tgtattacta    3874

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taaactgtat ttgaactatg tgcagctagc tttgttttaa tctgcttggc aaccagtgta    3994

gctgctgtaa caatctatct tattgttcaa atatataaga gccaaactct tttccattcc    4054

atctaaaatg ttttcattta gtactcttct ttcctcctac tctatgaact tcaaaacaaa    4114

aacaaaactt tgagagcagc acatgcatcc aggtatttat agattattgc cagtgtcttt    4174

tctgtatgct ataagcaagg gagcttaggt gttatttctt taatttatgc ttgaatctga    4234

aaaattattt ctgacttact ccatggcctc cttataataa gtagaagttt tatatataat    4294

taattttcag cattgggcac tgaattagga cagtcctcat ctcattgctt ggcccttcaa    4354

gcaacctagc taaaaggtgc tgatatttta tttagtactg ccaacttcaa gtgatttaga    4414

tatctatcta tctagatttc tgaaccaaga tatatttata gttcactttt gggttttttat    4474

acccacggta ggattctgca ttccagcatt aaatctgctt cattttagaa cctttataaa    4534

agcaatagct ggaatatact cccagtttta aaataaatgc ctgattgatt taaagcaagt    4594
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aggttatgct gaagtatata aagaagtttt atattctctc aaaaatggta ttatctttct   4654

ttatttgcta gattcttaca aatcttttaa gagggctgta acagttgctg ctagtattag   4714

ggttccacat cattctaatg tatagtttca agtcttaata gacaatctga attccactac   4774

atttcttttg gctccaacat tcctttttagc ttgaccagtc taatttaaaa tgtgtttgtt   4834

ggaggtcatt aacgttactt gtacaatgct gtcactgtgt gacatccata tgaattttgg   4894

tatatatcaa tcaatcaatc aatcacattg cattcaatca atcagctgtg attgattgat   4954

tatgcttaga aatactatag taactagatg cagtgtgaat tttttccatt aacaaacaaa   5014

caaacaagtc agtggcttaa atgtgattat ggtcctgcaa ggtgattctt gctaaaatat   5074

ctaaactttt gttttgtttt aactgaatca tttttttaact taaaaagctg gaaaatatca   5134

aatgctgttt ttttttttca ttgtcaacag tggtgtgtca ttttatgtat gttcctaatg   5194

cttatggaac tcctccaaaa taaagttact caaagag   5231

<210> 28
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<212> PRT
<213> Homo sapiens

<400> 28

Met Lys Val His Met His Thr Lys Phe Cys Leu Ile Cys Leu Leu Thr
1   5   10   15

Phe Ile Phe His His Cys Asn His Cys His Glu Glu His Asp His Gly

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            20                    25                    30


Pro Glu Ala Leu His Arg Gln His Arg Gly Met Thr Glu Leu Glu Pro
         35                40                45


Ser Lys Phe Ser Lys Gln Ala Ala Glu Asn Glu Lys Lys Tyr Tyr Ile
         50                55                 60


Glu Lys Leu Phe Glu Arg Tyr Gly Glu Asn Gly Arg Leu Ser Phe Phe
65                70                75                80


Gly Leu Glu Lys Leu Leu Thr Asn Leu Gly Leu Gly Glu Arg Lys Val
             85                90                95


Val Glu Ile Asn His Glu Asp Leu Gly His Asp His Val Ser His Leu
             100               105               110


Asp Ile Leu Ala Val Gln Glu Gly Lys His Phe His Ser His Asn His
             115               120               125


Gln His Ser His Asn His Leu Asn Ser Glu Asn Gln Thr Val Thr Ser
         130               135               140


Val Ser Thr Lys Arg Asn His Lys Cys Asp Pro Glu Lys Glu Thr Val
145               150               155               160


Glu Val Ser Val Lys Ser Asp Asp Lys His Met His Asp His Asn His
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                    165   170   175

Arg Leu Arg His His His Arg Leu His His His Leu Asp His Asn Asn
          180   185   190

Thr His His Phe His Asn Asp Ser Ile Thr Pro Ser Glu Arg Gly Glu
          195   200   205

Pro Ser Asn Glu Pro Ser Thr Glu Thr Asn Lys Thr Gln Glu Gln Ser
          210   215   220

Asp Val Lys Leu Pro Lys Gly Lys Arg Lys Lys Lys Gly Arg Lys Ser
225   230   235   240

Asn Glu Asn Ser Glu Val Ile Thr Pro Gly Phe Pro Pro Asn His Asp
              245   250   255

Gln Gly Glu Gln Tyr Glu His Asn Arg Val His Lys Pro Asp Arg Val
              260   265   270

His Asn Pro Gly His Ser His Val His Leu Pro Glu Arg Asn Gly His
          275   280   285

Asp Pro Gly Arg Gly His Gln Asp Leu Asp Pro Asp Asn Glu Gly Glu
          290   295   300

Leu Arg His Thr Arg Lys Arg Glu Ala Pro His Val Lys Asn Asn Ala

```
        305                   310                   315                   320


        Ile Ile Ser Leu Arg Lys Asp Leu Asn Glu Asp Asp His His His Glu
                        325                   330                   335



        Cys Leu Asn Val Thr Gln Leu Leu Lys Tyr Tyr Gly His Gly Ala Asn
                        340                   345                   350



        Ser Pro Ile Ser Thr Asp Leu Phe Thr Tyr Leu Cys Pro Ala Leu Leu
                    355                   360                   365



        Tyr Gln Ile Asp Ser Arg Leu Cys Ile Glu His Phe Asp Lys Leu Leu
                    370                   375                   380



        Val Glu Asp Ile Asn Lys Asp Lys Asn Leu Val Pro Glu Asp Glu Ala
        385                   390                   395                   400



        Asn Ile Gly Ala Ser Ala Trp Ile Cys Gly Ile Ile Ser Ile Thr Val
                        405                   410                   415



        Ile Ser Leu Leu Ser Leu Leu Gly Val Ile Leu Val Pro Ile Ile Asn
                        420                   425                   430



        Gln Gly Cys Phe Lys Phe Leu Leu Thr Phe Leu Val Ala Leu Ala Val
                        435                   440                   445



        Gly Thr Met Ser Gly Asp Ala Leu Leu His Leu Leu Pro His Ser Gln
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450   455   460

Gly Gly His Asp His Ser His Gln His Ala His Gly His Gly His Ser
465   470   475   480

His Gly His Glu Ser Asn Lys Phe Leu Glu Glu Tyr Asp Ala Val Leu
    485   490   495

Lys Gly Leu Val Ala Leu Gly Gly Ile Tyr Leu Leu Phe Ile Ile Glu
    500   505   510

His Cys Ile Arg Met Phe Lys His Tyr Lys Gln Gln Arg Gly Lys Gln
    515   520   525

Lys Trp Phe Met Lys Gln Asn Thr Glu Glu Ser Thr Ile Gly Arg Lys
    530   535   540

Leu Ser Asp His Lys Leu Asn Asn Thr Pro Asp Ser Asp Trp Leu Gln
545   550   555   560

Leu Lys Pro Leu Ala Gly Thr Asp Asp Ser Val Val Ser Glu Asp Arg
    565   570   575

Leu Asn Glu Thr Glu Leu Thr Asp Leu Glu Gly Gln Gln Glu Ser Pro
    580   585   590

Pro Lys Asn Tyr Leu Cys Ile Glu Glu Glu Lys Ile Ile Asp His Ser

595   600   605

His Ser Asp Gly Leu His Thr Ile His Glu His Asp Leu His Ala Ala
    610   615   620

Ala His Asn His His Gly Glu Asn Lys Thr Val Leu Arg Lys His Asn
625   630   635   640

His Gln Trp His His Lys His Ser His His Ser His Gly Pro Cys His
                645   650   655

Ser Gly Ser Asp Leu Lys Glu Thr Gly Ile Ala Asn Ile Ala Trp Met
            660   665   670

Val Ile Met Gly Asp Gly Ile His Asn Phe Ser Asp Gly Leu Ala Ile
        675   680   685

Gly Ala Ala Phe Ser Ala Gly Leu Thr Gly Gly Ile Ser Thr Ser Ile
    690   695   700

Ala Val Phe Cys His Glu Leu Pro His Glu Leu Gly Asp Phe Ala Val
705   710   715   720

Leu Leu Lys Ala Gly Met Thr Val Lys Gln Ala Ile Val Tyr Asn Leu
                725   730   735

Leu Ser Ala Met Met Ala Tyr Ile Gly Met Leu Ile Gly Thr Ala Val

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            740                745              750
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Gly Gln Tyr Ala Asn Asn Ile Thr Leu Trp Ile Phe Ala Val Thr Ala
        755   760   765

Gly Met Phe Leu Tyr Val Ala Leu Val Asp Met Leu Pro Glu Met Leu
    770   775   780

His Gly Asp Gly Asp Asn Glu Glu His Gly Phe Cys Pro Val Gly Gln
785   790   795   800

Phe Ile Leu Gln Asn Leu Gly Leu Leu Phe Gly Phe Ala Ile Met Leu
                805   810   815

Val Ile Ala Leu Tyr Glu Asp Lys Ile Val Phe Asp Ile Gln Phe
            820   825   830

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<212> DNA
<213> Homo sapiens

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<222> (138)..(2387)

<400> 29
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ccagtgggcc cgtgtggaac caaacctgcg cgcgtggccg ggccgtggga caacgaggcc   120

gcggagacga aggcgca atg gcg agg aag tta tct gta atc ttg atc ctg   170
                Met Ala Arg Lys Leu Ser Val Ile Leu Ile Leu
                 1   5   10

acc ttt gcc ctc tct gtc aca aat ccc ctt cat gaa cta aaa gca gct   218
Thr Phe Ala Leu Ser Val Thr Asn Pro Leu His Glu Leu Lys Ala Ala
        15   20   25

gct ttc ccc cag acc act gag aaa att agt ccg aat tgg gaa tct ggc   266
Ala Phe Pro Gln Thr Thr Glu Lys Ile Ser Pro Asn Trp Glu Ser Gly
         30   35   40

att aat gtt gac ttg gca att tcc aca cgg caa tat cat cta caa cag   314
Ile Asn Val Asp Leu Ala Ile Ser Thr Arg Gln Tyr His Leu Gln Gln
        45   50   55

ctt ttc tac cgc tat gga gaa aat aat tct ttg tca gtt gaa ggg ttc   362
Leu Phe Tyr Arg Tyr Gly Glu Asn Asn Ser Leu Ser Val Glu Gly Phe
60   65   70   75

aga aaa tta ctt caa aat ata ggc ata gat aag att aaa aga atc cat   410
Arg Lys Leu Leu Gln Asn Ile Gly Ile Asp Lys Ile Lys Arg Ile His
         80   85   90

ata cac cat gac cac gac cat cac tca gac cac gag cat cac tca gac   458
Ile His His Asp His Asp His His Ser Asp His Glu His His Ser Asp
         95   100   105

cat gag cgt cac tca gac cat gag cat cac tca gac cac gag cat cac   506
His Glu Arg His Ser Asp His Glu His His Ser Asp His Glu His His
         110   115   120

tct gac cat aat cat gct gct tct ggt aaa aat aag cga aaa gct ctt   554
Ser Asp His Asn His Ala Ala Ser Gly Lys Asn Lys Arg Lys Ala Leu

125   130   135

tgc cca gac cat gac tca gat agt tca ggt aaa gat cct aga aac agc   602
Cys Pro Asp His Asp Ser Asp Ser Ser Gly Lys Asp Pro Arg Asn Ser
140   145   150   155

cag ggg aaa gga gct cac cga cca gaa cat gcc agt ggt aga agg aat   650
Gln Gly Lys Gly Ala His Arg Pro Glu His Ala Ser Gly Arg Arg Asn
                160   165   170

gtc aag gac agt gtt agt gct agt gaa gtg acc tca act gtg tac aac   698
Val Lys Asp Ser Val Ser Ala Ser Glu Val Thr Ser Thr Val Tyr Asn
                175   180   185

act gtc tct gaa gga act cac ttt cta gag aca ata gag act cca aga   746
Thr Val Ser Glu Gly Thr His Phe Leu Glu Thr Ile Glu Thr Pro Arg
            190   195   200

cct gga aaa ctc ttc ccc aaa gat gta agc agc tcc act cca ccc agt   794
Pro Gly Lys Leu Phe Pro Lys Asp Val Ser Ser Ser Thr Pro Pro Ser
            205   210   215

gtc aca tca aag agc cgg gtg agc cgg ctg gct ggt agg aaa aca aat   842
Val Thr Ser Lys Ser Arg Val Ser Arg Leu Ala Gly Arg Lys Thr Asn
220   225   230   235

gaa tct gtg agt gag ccc cga aaa ggc ttt atg tat tcc aga aac aca   890
Glu Ser Val Ser Glu Pro Arg Lys Gly Phe Met Tyr Ser Arg Asn Thr
                240   245   250

aat gaa aat cct cag gag tgt ttc aat gca tca aag cta ctg aca tct   938
Asn Glu Asn Pro Gln Glu Cys Phe Asn Ala Ser Lys Leu Leu Thr Ser
            255   260   265

cat ggc atg ggc atc cag gtt ccg ctg aat gca aca gag ttc aac tat   986
His Gly Met Gly Ile Gln Val Pro Leu Asn Ala Thr Glu Phe Asn Tyr

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                270                    275                     280

ctc tgt cca gcc atc atc aac caa att gat gct aga tct tgt ctg att       1034
Leu Cys Pro Ala Ile Ile Asn Gln Ile Asp Ala Arg Ser Cys Leu Ile
     285                     290                     295

cat aca agt gaa aag aag gct gaa atc cct cca aag acc tat tca tta       1082
His Thr Ser Glu Lys Lys Ala Glu Ile Pro Pro Lys Thr Tyr Ser Leu
300                     305                     310                     315

caa ata gcc tgg gtt ggt ggt ttt ata gcc att tcc atc atc agt ttc      1130
Gln Ile Ala Trp Val Gly Gly Phe Ile Ala Ile Ser Ile Ile Ser Phe
                     320                     325                     330

ctg tct ctg ctg ggg gtt atc tta gtg cct ctc atg aat cgg gtg ttt      1178
Leu Ser Leu Leu Gly Val Ile Leu Val Pro Leu Met Asn Arg Val Phe
                     335                     340                     345

ttc aaa ttt ctc ctg agt ttc ctt gtg gca ctg gcc gtt ggg act ttg      1226
Phe Lys Phe Leu Leu Ser Phe Leu Val Ala Leu Ala Val Gly Thr Leu
                     350                     355                     360

agt ggt gat gct ttt tta cac ctt ctt cca cat tct cat gca agt cac      1274
Ser Gly Asp Ala Phe Leu His Leu Leu Pro His Ser His Ala Ser His
     365                     370                     375

cac cat agt cat agc cat gaa gaa cca gca atg gaa atg aaa aga gga      1322
His His Ser His Ser His Glu Glu Pro Ala Met Glu Met Lys Arg Gly
380                     385                     390                     395

cca ctt ttc agt cat ctg tct tct caa aac ata gaa gaa agt gcc tat      1370
Pro Leu Phe Ser His Leu Ser Ser Gln Asn Ile Glu Glu Ser Ala Tyr
                     400                     405                     410

ttt gat tcc acg tgg aag ggt cta aca gct cta gga ggc ctg tat ttc      1418
Phe Asp Ser Thr Trp Lys Gly Leu Thr Ala Leu Gly Gly Leu Tyr Phe
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                     415                    420                       425


          atg ttt ctt gtt gaa cat gtc ctc aca ttg atc aaa caa ttt aaa gat          1466
          Met Phe Leu Val Glu His Val Leu Thr Leu Ile Lys Gln Phe Lys Asp
                  430                    435                    440


          aag aag aaa aag aat cag aag aaa cct gaa aat gat gat gat gtg gag          1514
          Lys Lys Lys Lys Asn Gln Lys Lys Pro Glu Asn Asp Asp Asp Val Glu
                  445                    450                    455


          att aag aag cag ttg tcc aag tat gaa tct caa ctt tca aca aat gag          1562
          Ile Lys Lys Gln Leu Ser Lys Tyr Glu Ser Gln Leu Ser Thr Asn Glu
          460                    465                    470                    475


          gag aaa gta gat aca gat gat cga act gaa ggc tat tta cga gca gac          1610
          Glu Lys Val Asp Thr Asp Asp Arg Thr Glu Gly Tyr Leu Arg Ala Asp
                          480                    485                    490


          tca caa gag ccc tcc cac ttt gat tct cag cag cct gca gtc ttg gaa          1658
          Ser Gln Glu Pro Ser His Phe Asp Ser Gln Gln Pro Ala Val Leu Glu
                          495                    500                    505


          gaa gaa gag gtc atg ata gct cat gct cat cca cag gaa gtc tac aat          1706
          Glu Glu Glu Val Met Ile Ala His Ala His Pro Gln Glu Val Tyr Asn
                  510                    515                    520


          gaa tat gta ccc aga ggg tgc aag aat aaa tgc cat tca cat ttc cac          1754
          Glu Tyr Val Pro Arg Gly Cys Lys Asn Lys Cys His Ser His Phe His
                  525                    530                    535


          gat aca ctc ggc cag tca gac gat ctc att cac cac cat cat gac tac          1802
          Asp Thr Leu Gly Gln Ser Asp Asp Leu Ile His His His His Asp Tyr
          540                    545                    550                    555


          cat cat att ctc cat cat cac cac cac caa aac cac cat cct cac agt          1850
          His His Ile Leu His His His His His Gln Asn His His Pro His Ser
```

                    560   565   570

cac agc cag cgc tac tct cgg gag gag ctg aaa gat gcc ggc gtc gcc   1898
His Ser Gln Arg Tyr Ser Arg Glu Glu Leu Lys Asp Ala Gly Val Ala
            575   580   585

act ttg gcc tgg atg gtg ata atg ggt gat ggc ctg cac aat ttc agc   1946
Thr Leu Ala Trp Met Val Ile Met Gly Asp Gly Leu His Asn Phe Ser
            590   595   600

gat ggc cta gca att ggt gct gct ttt act gaa ggc tta tca agt ggt   1994
Asp Gly Leu Ala Ile Gly Ala Ala Phe Thr Glu Gly Leu Ser Ser Gly
            605   610   615

tta agt act tct gtt gct gtg ttc tgt cat gag ttg cct cat gaa tta   2042
Leu Ser Thr Ser Val Ala Val Phe Cys His Glu Leu Pro His Glu Leu
620   625   630   635

ggt gac ttt gct gtt cta cta aag gct ggc atg acc gtt aag cag gct   2090
Gly Asp Phe Ala Val Leu Leu Lys Ala Gly Met Thr Val Lys Gln Ala
            640   645   650

gtc ctt tat aat gca ttg tca gcc atg ctg gcg tat ctt gga atg gca   2138
Val Leu Tyr Asn Ala Leu Ser Ala Met Leu Ala Tyr Leu Gly Met Ala
            655   660   665

aca gga att ttc att ggt cat tat gct gaa aat gtt tct atg tgg ata   2186
Thr Gly Ile Phe Ile Gly His Tyr Ala Glu Asn Val Ser Met Trp Ile
            670   675   680

ttt gca ctt act gct ggc tta ttc atg tat gtt gct ctg gtt gat atg   2234
Phe Ala Leu Thr Ala Gly Leu Phe Met Tyr Val Ala Leu Val Asp Met
            685   690   695

gta cct gaa atg ctg cac aat gat gct agt gac cat gga tgt agc cgc   2282
Val Pro Glu Met Leu His Asn Asp Ala Ser Asp His Gly Cys Ser Arg

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          700                    705                  ·710                    715

tgg ggg tat ttc ttt tta cag aat gct ggg atg ctt ttg ggt ttt gga          2330
Trp Gly Tyr Phe Phe Leu Gln Asn Ala Gly Met Leu Leu Gly Phe Gly
                        720                 725                 730

att atg tta ctt att tcc ata ttt gaa cat aaa atc gtg ttt cgt ata          2378
Ile Met Leu Leu Ile Ser Ile Phe Glu His Lys Ile Val Phe Arg Ile
               735          ·            740                 745

aat ttc tag ttaaggttta aatgctagag tagcttaaaa agttgtcata               2427
Asn Phe


gtttcagtag gtcataggga gatgagtttg tatgctgtac tatgcagcgt ttaaagttag       2487

tgggtttttgt gatttttgta ttgaatattg ctgtctgtta caaagtcagt taaaggtacg      2547

ttttaatatt taagttattc tatcttggag ataaaatctg tatgtgcaat tcaccggtat       2607

taccagttta ttatgtaaac aagagatttg gcatgacatg ttctgtatgt ttcagggaaa       2667

aatgtcttta atgcttttc aagaactaac acagttattc ctatactgga ttttaggtct        2727

ctgaagaact gctggtg                                                       2744
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<210> 30
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<400> 30

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Met Ala Arg Lys Leu Ser Val Ile Leu Ile Leu Thr Phe Ala Leu Ser
1               5                  ·10                 15
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Val Thr Asn Pro Leu His Glu Leu Lys Ala Ala Ala Phe Pro Gln Thr
              20   25   30

Thr Glu Lys Ile Ser Pro Asn Trp Glu Ser Gly Ile Asn Val Asp Leu
          35   40   45

Ala Ile Ser Thr Arg Gln Tyr His Leu Gln Gln Leu Phe Tyr Arg Tyr
          50   55   60

Gly Glu Asn Asn Ser Leu Ser Val Glu Gly Phe Arg Lys Leu Leu Gln
65   70   75   80

Asn Ile Gly Ile Asp Lys Ile Lys Arg Ile His Ile His His Asp His
              85   90   95

Asp His His Ser Asp His Glu His His Ser Asp His Glu Arg His Ser
              100   105   110

Asp His Glu His His Ser Asp His Glu His His Ser Asp His Asn His
          115   120   125

Ala Ala Ser Gly Lys Asn Lys Arg Lys Ala Leu Cys Pro Asp His Asp
          130   135   140

Ser Asp Ser Ser Gly Lys Asp Pro Arg Asn Ser Gln Gly Lys Gly Ala
145   150   155   160

His Arg Pro Glu His Ala Ser Gly Arg Arg Asn Val Lys Asp Ser Val
            165   170   175

Ser Ala Ser Glu Val Thr Ser Thr Val Tyr Asn Thr Val Ser Glu Gly
          180   185   190

Thr His Phe Leu Glu Thr Ile Glu Thr Pro Arg Pro Gly Lys Leu Phe
          195   200   205

Pro Lys Asp Val Ser Ser Ser Thr Pro Pro Ser Val Thr Ser Lys Ser
   210   215   220

Arg Val Ser Arg Leu Ala Gly Arg Lys Thr Asn Glu Ser Val Ser Glu
225   230   235   240

Pro Arg Lys Gly Phe Met Tyr Ser Arg Asn Thr Asn Glu Asn Pro Gln
          245   250   255

Glu Cys Phe Asn Ala Ser Lys Leu Leu Thr Ser His Gly Met Gly Ile
          260   265   270

Gln Val Pro Leu Asn Ala Thr Glu Phe Asn Tyr Leu Cys Pro Ala Ile
          275   280   285

Ile Asn Gln Ile Asp Ala Arg Ser Cys Leu Ile His Thr Ser Glu Lys
          290   295   300

Lys Ala Glu Ile Pro Pro Lys Thr Tyr Ser Leu Gln Ile Ala Trp Val
305   310   315   320

Gly Gly Phe Ile Ala Ile Ser Ile Ile Ser Phe Leu Ser Leu Leu Gly
                325   330   335

Val Ile Leu Val Pro Leu Met Asn Arg Val Phe Phe Lys Phe Leu Leu
                340   345   350

Ser Phe Leu Val Ala Leu Ala Val Gly Thr Leu Ser Gly Asp Ala Phe
            355   360   365

Leu His Leu Leu Pro His Ser His Ala Ser His His His Ser His Ser
        370   375   380

His Glu Glu Pro Ala Met Glu Met Lys Arg Gly Pro Leu Phe Ser His
385   390   395   400

Leu Ser Ser Gln Asn Ile Glu Glu Ser Ala Tyr Phe Asp Ser Thr Trp
                405   410   415

Lys Gly Leu Thr Ala Leu Gly Gly Leu Tyr Phe Met Phe Leu Val Glu
                420   425   430

His Val Leu Thr Leu Ile Lys Gln Phe Lys Asp Lys Lys Lys Lys Asn
            435   440   445

Gln Lys Lys Pro Glu Asn Asp Asp Asp Val Glu Ile Lys Lys Gln Leu
     450   455   460

Ser Lys Tyr Glu Ser Gln Leu Ser Thr Asn Glu Glu Lys Val Asp Thr
465   470   475   480

Asp Asp Arg Thr Glu Gly Tyr Leu Arg Ala Asp Ser Gln Glu Pro Ser
            485   490   495

His Phe Asp Ser Gln Gln Pro Ala Val Leu Glu Glu Glu Glu Val Met
          500   505   510

Ile Ala His Ala His Pro Gln Glu Val Tyr Asn Glu Tyr Val Pro Arg
          515   520   525

Gly Cys Lys Asn Lys Cys His Ser His Phe His Asp Thr Leu Gly Gln
     530   535   540

Ser Asp Asp Leu Ile His His His His Asp Tyr His His Ile Leu His
545   550   555   560

His His His His Gln Asn His His Pro His Ser His Ser Gln Arg Tyr
          565   570   575

Ser Arg Glu Glu Leu Lys Asp Ala Gly Val Ala Thr Leu Ala Trp Met
          580   585   590

Val Ile Met Gly Asp Gly Leu His Asn Phe Ser Asp Gly Leu Ala Ile
        595   600   605

Gly Ala Ala Phe Thr Glu Gly Leu Ser Ser Gly Leu Ser Thr Ser Val
        610   615   620

Ala Val Phe Cys His Glu Leu Pro His Glu Leu Gly Asp Phe Ala Val
625   630   635   640

Leu Leu Lys Ala Gly Met Thr Val Lys Gln Ala Val Leu Tyr Asn Ala
                645   650   655

Leu Ser Ala Met Leu Ala Tyr Leu Gly Met Ala Thr Gly Ile Phe Ile
                660   665   670

Gly His Tyr Ala Glu Asn Val Ser Met Trp Ile Phe Ala Leu Thr Ala
        675   680   685

Gly Leu Phe Met Tyr Val Ala Leu Val Asp Met Val Pro Glu Met Leu
        690   695   700

His Asn Asp Ala Ser Asp His Gly Cys Ser Arg Trp Gly Tyr Phe Phe
705   710   715   720

Leu Gln Asn Ala Gly Met Leu Leu Gly Phe Gly Ile Met Leu Leu Ile
                725   730   735

Ser Ile Phe Glu His Lys Ile Val Phe Arg Ile Asn Phe
740   745

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<222> (147)..(1625)

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ccgagcgcca ggtttattca gtcacc atg aag ctg ctg ctg ctg cac ccg gcc   173
                              Met Lys Leu Leu Leu Leu His Pro Ala
                               1   5

ttc cag agc tgc ctc ctg ctg acc ctg ctt ggc tta tgg aga acc acc   221
Phe Gln Ser Cys Leu Leu Leu Thr Leu Leu Gly Leu Trp Arg Thr Thr
10   15   20   25

cct gag gct cac gct tca tcc ctg ggt gca cca gct atc agc gct gcc   269
Pro Glu Ala His Ala Ser Ser Leu Gly Ala Pro Ala Ile Ser Ala Ala
                30   35   40

tcc ttc ctg cag gat cta ata cat cgg tat ggc gag ggt gac agc ccc   317
Ser Phe Leu Gln Asp Leu Ile His Arg Tyr Gly Glu Gly Asp Ser Pro
            45   50   55

act ctg cag cag ctg aag gcc cta ctc aac cac ctg gat gtg gga gtg   365
Thr Leu Gln Gln Leu Lys Ala Leu Leu Asn His Leu Asp Val Gly Val
     60   65   70

ggc cgg ggt aat gtc acc cag cac gtg caa gga cac agg aac ctc tcc   413
Gly Arg Gly Asn Val Thr Gln His Val Gln Gly His Arg Asn Leu Ser
     75   80   85

acg tgc ttt agt tct gga gac ctc ttc act gcc cac aat ttc agc gag   461
Thr Cys Phe Ser Ser Gly Asp Leu Phe Thr Ala His Asn Phe Ser Glu
90   95   100   105

cag tcg cgg att ggg agc agc gag ctc cag gag ttc tgc ccc acc atc   509
Gln Ser Arg Ile Gly Ser Ser Glu Leu Gln Glu Phe Cys Pro Thr Ile
            110   115   120

ctc cag cag ctg gat tcc cgg gcc tgc acc tcg gag aac cag gaa aac   557
Leu Gln Gln Leu Asp Ser Arg Ala Cys Thr Ser Glu Asn Gln Glu Asn
            125   130   135

gag gag aat gag cag acg gag gag ggg cgg cca agc gct gtt gaa gtg   605
Glu Glu Asn Glu Gln Thr Glu Glu Gly Arg Pro Ser Ala Val Glu Val
            140   145   150

tgg ggc ttt ggt ttt ctc agt gtc tca ctg att aac ctg gcc tct ctc   653
Trp Gly Phe Gly Phe Leu Ser Val Ser Leu Ile Asn Leu Ala Ser Leu
            155   160   165

ctg gga gtc ctc gtc ctg ccc tgc aca gag aaa gcg ttt ttc agc cgt   701
Leu Gly Val Leu Val Leu Pro Cys Thr Glu Lys Ala Phe Phe Ser Arg
170   175   180   185

gtg ctc act tac ttc atc gcc ctg tcc att gga acg ctg ctg tct aac   749
Val Leu Thr Tyr Phe Ile Ala Leu Ser Ile Gly Thr Leu Leu Ser Asn
            190   195   200

gcg cta ttc cag ctc atc cca gag gca ttt ggt ttc aac cct ctg gaa   797
Ala Leu Phe Gln Leu Ile Pro Glu Ala Phe Gly Phe Asn Pro Leu Glu
          205   210   215

gat tat tat gtc tcc aag tct gca gtg gtg ttt ggg ggc ttt tat ctt   845
Asp Tyr Tyr Val Ser Lys Ser Ala Val Val Phe Gly Gly Phe Tyr Leu
          220   225   230

ttc ttt ttc aca gag aag atc ttg aag att ctt ctt aag cag aaa aat   893
Phe Phe Phe Thr Glu Lys Ile Leu Lys Ile Leu Leu Lys Gln Lys Asn
          235   240   245

gag cat cat cat gga cac agc cat tat gcc tct gag tcg ctt ccc tcc   941
Glu His His His Gly His Ser His Tyr Ala Ser Glu Ser Leu Pro Ser
250   255   260   265

aag aag gac cag gag gag ggg gtg atg gag aag ctg cag aac ggg gac   989
Lys Lys Asp Gln Glu Glu Gly Val Met Glu Lys Leu Gln Asn Gly Asp
               270   275   280

ctg gac cac atg att cct cag cac tgc agc agt gag ctg gac ggc aag   1037
Leu Asp His Met Ile Pro Gln His Cys Ser Ser Glu Leu Asp Gly Lys
               285   290   295

gcg ccc atg gtg gac gag aag gtc att gtg ggc tcg ctc tct gtg cag   1085
Ala Pro Met Val Asp Glu Lys Val Ile Val Gly Ser Leu Ser Val Gln
          300   305   310

gac ctg cag gct tcc cag agt gct tgc tac tgg ctg aaa ggt gtc cgc   1133
Asp Leu Gln Ala Ser Gln Ser Ala Cys Tyr Trp Leu Lys Gly Val Arg
          315   320   325

tac tct gat atc ggc act ctg gcc tgg atg atc act ctg agc gac ggc   1181
Tyr Ser Asp Ile Gly Thr Leu Ala Trp Met Ile Thr Leu Ser Asp Gly
330   335   340   345

ctc cat aat ttc atc gat ggc ctg gcc atc ggt gct tcc ttc act gtg   1229
Leu His Asn Phe Ile Asp Gly Leu Ala Ile Gly Ala Ser Phe Thr Val
              350   355   360

tca gtt ttc caa ggc atc agc acc tcg gtg gcc atc ctc tgt gag gag   1277
Ser Val Phe Gln Gly Ile Ser Thr Ser Val Ala Ile Leu Cys Glu Glu
           365   370   375

ttc cca cgt gag cta gga gac ttt gtc atc ctg ctc aac gct ggg atg   1325
Phe Pro Arg Glu Leu Gly Asp Phe Val Ile Leu Leu Asn Ala Gly Met
              380   385   390

agc atc caa caa gct ctc ttc ttc aac ttc ctt tct gcc tgc tgc tgc   1373
Ser Ile Gln Gln Ala Leu Phe Phe Asn Phe Leu Ser Ala Cys Cys Cys
           395   400   405

tac ctg ggt ctg gcc ttt ggc atc ctg gcc ggc agc cac ttc tct gcc   1421
Tyr Leu Gly Leu Ala Phe Gly Ile Leu Ala Gly Ser His Phe Ser Ala
410   415   420   425

aac tgg att ttt gcg cta gct gga gga atg ttc ttg tat att tct ctg   1469
Asn Trp Ile Phe Ala Leu Ala Gly Gly Met Phe Leu Tyr Ile Ser Leu
              430   435   440

gct gat atg ttc cct gag atg aat gag gtc tgt caa gag gat gaa agg   1517
Ala Asp Met Phe Pro Glu Met Asn Glu Val Cys Gln Glu Asp Glu Arg
              445   450   455

aag ggc agc atc ttg att cca ttt atc atc cag aac ctg ggc ctc ctg   1565
Lys Gly Ser Ile Leu Ile Pro Phe Ile Ile Gln Asn Leu Gly Leu Leu
              460   465   470

act gga ttc acc atc atg gtg gtc ctc acc atg tat tca gga cag atc   1613
Thr Gly Phe Thr Ile Met Val Val Leu Thr Met Tyr Ser Gly Gln Ile
              475   480   485

cag att ggg tag ggctctgcca agagcctgtg ggactggaag tcgggccctg   1665
Gln Ile Gly
490

ggctgcccga tcgccagccc gaggacttac catccacaat gcaccacgga agaggccgtt   1725

ctatgaaaaa ctgacacaga ctgtattcct gcattcaaat gtcagccgtt tgtaaaatgc   1785

tgtatcctag gaataagctg ccctggtaac cagtctctag ctagtgcctc ttgccctctc   1845

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ctttttctc tgattacctt ggcctcctct tggaaccagt gctgaaaggt tttgaatcct   1965

ttacccaaca atgcaaaaat agagccaatg gttataactt ggctagaaat atcaagagtt   2025

gaatccatag tgtggggccc atgactctag ctgggcacct tggacctcca gctggccaat   2085

agaagagaca ggagacagga agccttccca tttttcaaa gtctgtttaa ttgcctatta   2145

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tcatcctgaa tgggagagga agtcgaacca ctgctgtgtg tcttgtcagg atgctcactt   2265

gttcctactg agatgctgga tattgatttt gtaacagcac ctggtgtttc acggctgtcc   2325

gagtgagcta acgtggcggt gtggctgcct ggacctcctc tttcaggtta acgctgacag   2385

aatggaggct caggctgtct gcaagaaaac agttggtttg gctgtgattt tgacctcctc   2445

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catttgagac ctctgtgtta gaggggagac tgcacaaact atcctcccc aggttgagac   2565

gtctgcagag tggcaagctg acttgtagaa atggggtgcc atttatgctc tacttagaca   2625

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agggtaatca gaaatggaat cagtgcaggc aaaatttagg atttgccgct tccataaatc    2685

aaagcatgac taatagggggg tctctgaaat gtaagggcac aaacttcact tagggcatcg    2745

cagatgtttg cagaatggtt ggcctaatga ttatgctaca gatgggtttt aaatgacccg    2805

tctaggttac tgcttccttg caaaaaagtc gaatcctgca ttgaattgaa tatgaatttc    2865

tctaactctc tccagaaaat ggatggagat aacttgtctt taaaactgta ggccagcctt    2925

ggccactgtg gagcccttgc ctccgagctc tggcttcaag gggagctctt ctccaggttc    2985

actaggtgaa ttgatttatt attatcatat tgataatgtg agattcttta gccactttgg    3045

ggagcctgtc cctccagaag cctttcttag tggtgcccac agttggagcc caggggccat    3105

gtttgcaaac tgattcatgt gcatggctga caggagtact ggttcactac caatgcctga    3165

gcttttctct tacatagaaa aactgtccgc tctcagtaat cacaagcagc atccgttttg    3225

ttttctcttc ttgggagaca tctgtcaaac caggaatatt cttgaaaaga acgtgagcag    3285

gaaaaactgc tggtgatact tttttttaagt tttgtttttta tcttgcctgt tggcttcaat    3345

acatttgaga atacgctgaa gagggaaaat ttcagtgatg gagattctag attaaatatc    3405

aggactgatt tcctggtggg attatggtcc agttttacca aagaaccaat tccttgaatg    3465

ttggaatcta actttttata ttgtcattat tattgttgtt tttaaacggt tctttgtctt    3525

ttctgtttta tttttctcaa gctgctttca ggagctagca gaaaataact caaagttgaa    3585

gactctggaa gattttgctt taacctaact cgcattgatg tattaaattt ataattttag    3645

cattcccaat agatcctatc attccttaaa cataataccc tttgtcttgg agtagaatac    3705
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taagttagag ttagtggatt tctagtttag gagaggagct caaaactata atctttaaca   3765

aattgaaaaa tgaaataggg tgttttccct ttttgtgcac acctatatta ccttaagaaa   3825

tttccttcca tagacagctg cctcaaaggg aaatcctctt taaaccgtag ttggcgcaga   3885

ggtcagtcct agtcggagct taggaggggc ggagacgctc acatcgtctg acttgagtcg   3945

ccactgattg tggcaacagc tttgcctcat gagtcaaaaa ttggcaattt cttttgattt   4005

ttagttgttg aatttgctgt ttcaagcatt tgtacatatt agaagtctaa ggagtagcaa   4065

gtcagtggga ggacttttc accc ctggca ttagcagctt cgacctcatt ttccagatgc   4125

accagctcct attaataagt tagcaaggaa agtgtatgtc acgtgcagga acagtgaggc   4185

agggacaggg gttctgctcc ttctcacttc accaccggca cacagcttgc ccctgtcttt   4245

gcccccaaag gtattttgtg tctagtgtca aattggagct attcttcact ggtccttaac   4305

cttgggtttt aaaaagaagg cttctctgtt tgggtagcgt aagagctgag tatagtaagt   4365

cctcttccaa agagatggca atatgctggg catctacttt aaaacaaagt tgtctgattt   4425

ttgcaagaga ggttaggatt ttattgttct tatttccctt tacagttctg cagttccatc   4485

acagtatttt tttaaataac tcaggtgtat gagaagaaat tagaaaagaa aattaactta   4545

tgtggactgt aaatgtttta tttgtaagat tctataaata aagctatatt ctgtaattgt   4605

tgagaaaaaa aaaaaaaaaa aa   4627

<210> 32
<211> 492

<212> PRT
<213> Homo sapiens

<400> 32

Met Lys Leu Leu Leu Leu His Pro Ala Phe Gln Ser Cys Leu Leu Leu
1   5   10   15

Thr Leu Leu Gly Leu Trp Arg Thr Thr Pro Glu Ala His Ala Ser Ser
            20   25   30

Leu Gly Ala Pro Ala Ile Ser Ala Ala Ser Phe Leu Gln Asp Leu Ile
            35   40   45

His Arg Tyr Gly Glu Gly Asp Ser Pro Thr Leu Gln Gln Leu Lys Ala
        50   55   60

Leu Leu Asn His Leu Asp Val Gly Val Gly Arg Gly Asn Val Thr Gln
65   70   75   80

His Val Gln Gly His Arg Asn Leu Ser Thr Cys Phe Ser Ser Gly Asp
                85   90   95

Leu Phe Thr Ala His Asn Phe Ser Glu Gln Ser Arg Ile Gly Ser Ser
            100   105   110

Glu Leu Gln Glu Phe Cys Pro Thr Ile Leu Gln Gln Leu Asp Ser Arg
            115   120   125

Ala Cys Thr Ser Glu Asn Gln Glu Asn Glu Glu Asn Glu Gln Thr Glu
    130   135   140

Glu Gly Arg Pro Ser Ala Val Glu Val Trp Gly Phe Gly Phe Leu Ser
145   150   155   160

Val Ser Leu Ile Asn Leu Ala Ser Leu Leu Gly Val Leu Val Leu Pro
          165   170   175

Cys Thr Glu Lys Ala Phe Phe Ser Arg Val Leu Thr Tyr Phe Ile Ala
         180   185   190

Leu Ser Ile Gly Thr Leu Leu Ser Asn Ala Leu Phe Gln Leu Ile Pro
         195   200   205

Glu Ala Phe Gly Phe Asn Pro Leu Glu Asp Tyr Tyr Val Ser Lys Ser
    210   215   220

Ala Val Val Phe Gly Gly Phe Tyr Leu Phe Phe Phe Thr Glu Lys Ile
225   230   235   240

Leu Lys Ile Leu Leu Lys Gln Lys Asn Glu His His His Gly His Ser
         245   250   255

His Tyr Ala Ser Glu Ser Leu Pro Ser Lys Lys Asp Gln Glu Glu Gly
         260   265   270

Val Met Glu Lys Leu Gln Asn Gly Asp Leu Asp His Met Ile Pro Gln
         275   280   285

His Cys Ser Ser Glu Leu Asp Gly Lys Ala Pro Met Val Asp Glu Lys
     290   295   300

Val Ile Val Gly Ser Leu Ser Val Gln Asp Leu Gln Ala Ser Gln Ser
305   310   315   320

Ala Cys Tyr Trp Leu Lys Gly Val Arg Tyr Ser Asp Ile Gly Thr Leu
             325   330   335

Ala Trp Met Ile Thr Leu Ser Asp Gly Leu His Asn Phe Ile Asp Gly
             340   345   350

Leu Ala Ile Gly Ala Ser Phe Thr Val Ser Val Phe Gln Gly Ile Ser
             355   360   365

Thr Ser Val Ala Ile Leu Cys Glu Glu Phe Pro Arg Glu Leu Gly Asp
     370   375   380

Phe Val Ile Leu Leu Asn Ala Gly Met Ser Ile Gln Gln Ala Leu Phe
385   390   395   400

Phe Asn Phe Leu Ser Ala Cys Cys Cys Tyr Leu Gly Leu Ala Phe Gly
             405   410   415

Ile Leu Ala Gly Ser His Phe Ser Ala Asn Trp Ile Phe Ala Leu Ala
          420   425   430

Gly Gly Met Phe Leu Tyr Ile Ser Leu Ala Asp Met Phe Pro Glu Met
          435   440   445

Asn Glu Val Cys Gln Glu Asp Glu Arg Lys Gly Ser Ile Leu Ile Pro
          450   455   460

Phe Ile Ile Gln Asn Leu Gly Leu Leu Thr Gly Phe Thr Ile Met Val
465   470   475   480

Val Leu Thr Met Tyr Ser Gly Gln Ile Gln Ile Gly
          485   490

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<220>
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<400> 33
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cccactgagc acgctgggag ctgagt atg gcg tcc ctg gtc tcg ctg gag ctg   113
                                Met Ala Ser Leu Val Ser Leu Glu Leu

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                              1                    5

ggg ctg ctt ctg gct gtg ctg gtg gtg acg gcg acg gcg tcc ccg cct        161
Gly Leu Leu Leu Ala Val Leu Val Val Thr Ala Thr Ala Ser Pro Pro
10               15              20              25


gct ggt ctg ctg agc ctg ctc acc tct ggc cag ggc gct ctg gat caa        209
Ala Gly Leu Leu Ser Leu Leu Thr Ser Gly Gln Gly Ala Leu Asp Gln
             30              35              40


gag gct ctg ggc ggc ctg tta aat acg ctg gcg gac cgt gtg cac tgc        257
Glu Ala Leu Gly Gly Leu Leu Asn Thr Leu Ala Asp Arg Val His Cys
             45              50              55


acc aac ggg ccg tgt gga aag tgc ctg tct gtg gag gac gcc ctg ggc        305
Thr Asn Gly Pro Cys Gly Lys Cys Leu Ser Val Glu Asp Ala Leu Gly
             60              65              70


ctg ggc gag cct gag ggg tca ggg ctg ccc ccg ggc ccg gtc ctg gag        353
Leu Gly Glu Pro Glu Gly Ser Gly Leu Pro Pro Gly Pro Val Leu Glu
         75              80              85


gcc agg tac gtc gcc cgc ctc agt gcc gcc gcc gtc ctg tac ctc agc        401
Ala Arg Tyr Val Ala Arg Leu Ser Ala Ala Ala Val Leu Tyr Leu Ser
90              95              100             105


aac ccc gag ggc acc tgt gag gac act cgg gct ggc ctc tgg gcc tct        449
Asn Pro Glu Gly Thr Cys Glu Asp Thr Arg Ala Gly Leu Trp Ala Ser
                 110             115             120


cat gca gac cac ctc ctg gcc ctg ctc gag agc ccc aag gcc ctg acc        497
His Ala Asp His Leu Leu Ala Leu Leu Glu Ser Pro Lys Ala Leu Thr
                 125             130             135


ccg ggc ctg agc tgg ctg ctg cag agg atg cag gcc cgg gct gcc ggc        545
Pro Gly Leu Ser Trp Leu Leu Gln Arg Met Gln Ala Arg Ala Ala Gly
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                140                    145                    150

cag acc ccc aag acg gcc tgc gta gat atc cct cag ctg ctg gag gag        593
Gln Thr Pro Lys Thr Ala Cys Val Asp Ile Pro Gln Leu Leu Glu Glu
    155                    160                    165

gcg gtg ggg gcg ggg gct ccg ggc agt gct ggc ggc gtc ctg gct gcc        641
Ala Val Gly Ala Gly Ala Pro Gly Ser Ala Gly Gly Val Leu Ala Ala
170                    175                    180                    185

ctg ctg gac cat gtc agg agc ggg tct tgc ttc cac gcc ttg ccg agc        689
Leu Leu Asp His Val Arg Ser Gly Ser Cys Phe His Ala Leu Pro Ser
                   190                    195                    200

cct cag tac ttc gtg gac ttt gtg ttc cag cag cac agc agc gag gtc        737
Pro Gln Tyr Phe Val Asp Phe Val Phe Gln Gln His Ser Ser Glu Val
                   205                    210                    215

cct atg acg ctg gcc gag ctg tca gcc ttg atg cag cgc ctg ggg gtg        785
Pro Met Thr Leu Ala Glu Leu Ser Ala Leu Met Gln Arg Leu Gly Val
                   220                    225                    230

ggc agg gag gcc cac agt gac cac agt cat cgg cac agg gga gcc agc        833
Gly Arg Glu Ala His Ser Asp His Ser His Arg His Arg Gly Ala Ser
    235                    240                    245

agc cgg gac cct gtg ccc ctc atc agc tcc agc aac agc tcc agt gtg        881
Ser Arg Asp Pro Val Pro Leu Ile Ser Ser Ser Asn Ser Ser Ser Val
250                    255                    260                    265

tgg gac acg gta tgc ctg agt gcc agg gac gtg atg gct gca tat gga        929
Trp Asp Thr Val Cys Leu Ser Ala Arg Asp Val Met Ala Ala Tyr Gly
                   270                    275                    280

ctg tcg gaa cag gct ggg gtg acc ccg gag gcc tgg gcc caa ctg agc        977
Leu Ser Glu Gln Ala Gly Val Thr Pro Glu Ala Trp Ala Gln Leu Ser
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              285                    290                      295

cct gcc ctg ctc caa cag cag ctg agt gga gcc tgc acc tcc cag tcc    1025
Pro Ala Leu Leu Gln Gln Gln Leu Ser Gly Ala Cys Thr Ser Gln Ser
        300                    305                    310

agg ccc ccc gtc cag gac cag ctc agc cag tca gag agg tat ctg tac    1073
Arg Pro Pro Val Gln Asp Gln Leu Ser Gln Ser Glu Arg Tyr Leu Tyr
        315                    320                    325

ggc tcc ctg gcc acg ctg ctc atc tgc ctc tgc gcg gtc ttt ggc ctc    1121
Gly Ser Leu Ala Thr Leu Leu Ile Cys Leu Cys Ala Val Phe Gly Leu
330                    335                    340                    345

ctg ctg ctg acc tgc act ggc tgc agg ggg gtc acc cac tac atc ctg    1169
Leu Leu Leu Thr Cys Thr Gly Cys Arg Gly Val Thr His Tyr Ile Leu
                350                    355                    360

cag acc ttc ctg agc ctg gca gtg ggt gca ctc act ggg gac gct gtc    1217
Gln Thr Phe Leu Ser Leu Ala Val Gly Ala Leu Thr Gly Asp Ala Val
                365                    370                    375

ctg cat ctg acg ccc aag gtg ctg ggg ctg cat aca cac agc gaa gag    1265
Leu His Leu Thr Pro Lys Val Leu Gly Leu His Thr His Ser Glu Glu
                380                    385                    390

ggc ctc agc cca cag ccc acc tgg cgc ctc ctg gct atg ctg gcc ggg    1313
Gly Leu Ser Pro Gln Pro Thr Trp Arg Leu Leu Ala Met Leu Ala Gly
        395                    400                    405

ctc tac gcc ttc ttc ctg ttt gag aac ctc ttc aat ctc ctg ctg ccc    1361
Leu Tyr Ala Phe Phe Leu Phe Glu Asn Leu Phe Asn Leu Leu Leu Pro
410                    415                    420                    425

agg gac ccg gag gac ctg gag gac ggg ccc tgc ggc cac agc agc cat    1409
Arg Asp Pro Glu Asp Leu Glu Asp Gly Pro Cys Gly His Ser Ser His
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                       430                    435                    440

agc cac ggg ggc cac agc cac ggt gtg tcc ctg cag ctg gca ccc agc          1457
Ser His Gly Gly His Ser His Gly Val Ser Leu Gln Leu Ala Pro Ser
                445                    450                    455


gag ctc cgg cag ccc aag ccc ccc cac gag ggc tcc cgc gca gac ctg          1505
Glu Leu Arg Gln Pro Lys Pro Pro His Glu Gly Ser Arg Ala Asp Leu
            460                    465                    470


gtg gcg gag gag agc ccg gag ctg ctg aac cct gag ccc agg aga ctg          1553
Val Ala Glu Glu Ser Pro Glu Leu Leu Asn Pro Glu Pro Arg Arg Leu
        475                    480                    485


agc cca gag ttg agg cta ctg ccc tat atg atc act ctg ggc gac gcc          1601
Ser Pro Glu Leu Arg Leu Leu Pro Tyr Met Ile Thr Leu Gly Asp Ala
490                    495                    500                    505


gtg cac aac ttc gcc gac ggg ctg gcc gtg ggc gcc gcc ttc gcg tcc          1649
Val His Asn Phe Ala Asp Gly Leu Ala Val Gly Ala Ala Phe Ala Ser
                510                    515                    520


tcc tgg aag acc ggg ctg gcc acc tcg ctg gcc gtg ttc tgc cac gag          1697
Ser Trp Lys Thr Gly Leu Ala Thr Ser Leu Ala Val Phe Cys His Glu
                525                    530                    535


ttg cca cac gag ctg ggg gac ttc gcc gcc ttg ctg cac gcg ggg ctg          1745
Leu Pro His Glu Leu Gly Asp Phe Ala Ala Leu Leu His Ala Gly Leu
                540                    545                    550


tcc gtg cgc caa gca ctg ctg ctg aac ctg gcc tcc gcg ctc acg gcc          1793
Ser Val Arg Gln Ala Leu Leu Leu Asn Leu Ala Ser Ala Leu Thr Ala
        555                    560                    565


ttc gct ggt ctc tac gtg gca ctc gcg gtt gga gtc agc gag gag agc          1841
Phe Ala Gly Leu Tyr Val Ala Leu Ala Val Gly Val Ser Glu Glu Ser
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570   575   580   585

gag gcc tgg atc ctg gca gtg gcc acc ggc ctg ttc ctc tac gta gca   1889
Glu Ala Trp Ile Leu Ala Val Ala Thr Gly Leu Phe Leu Tyr Val Ala
              590   595   600

ctc tgc gac atg ctc ccg gcg atg ttg aaa gta cgg gac ccg cgg ccc   1937
Leu Cys Asp Met Leu Pro Ala Met Leu Lys Val Arg Asp Pro Arg Pro
              605   610   615

tgg ctc ctc ttc ctg ctg cac aac gtg ggc ctg ctg ggc ggc tgg acc   1985
Trp Leu Leu Phe Leu Leu His Asn Val Gly Leu Leu Gly Gly Trp Thr
              620   625   630

gtc ctg ctg ctg ctg tcc ctg tac gag gat gac atc acc ttc tga   2030
Val Leu Leu Leu Leu Ser Leu Tyr Glu Asp Asp Ile Thr Phe
              635   640   645

taccctgccc tagtccccca cctttgactt aagatcccac acctcacaaa cctacagccc   2090

agaaaccaga agcccctata gaggccccag tcccaactcc agtaaagaca ctcttgtcct   2150

tggaaaaaaa aaaaaaaaaa aaaaaaaa   2178

<210> 34
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<212> PRT
<213> Homo sapiens

<400> 34

Met Ala Ser Leu Val Ser Leu Glu Leu Gly Leu Leu Leu Ala Val Leu
1   5   10   15

Val Val Thr Ala Thr Ala Ser Pro Pro Ala Gly Leu Leu Ser Leu Leu
      20   25   30

Thr Ser Gly Gln Gly Ala Leu Asp Gln Glu Ala Leu Gly Gly Leu Leu
      35   40   45

Asn Thr Leu Ala Asp Arg Val His Cys Thr Asn Gly Pro Cys Gly Lys
      50   55   60

Cys Leu Ser Val Glu Asp Ala Leu Gly Leu Gly Glu Pro Glu Gly Ser
65   70   75   80

Gly Leu Pro Pro Gly Pro Val Leu Glu Ala Arg Tyr Val Ala Arg Leu
          85   90   95

Ser Ala Ala Ala Val Leu Tyr Leu Ser Asn Pro Glu Gly Thr Cys Glu
      100   105   110

Asp Thr Arg Ala Gly Leu Trp Ala Ser His Ala Asp His Leu Leu Ala
      115   120   125

Leu Leu Glu Ser Pro Lys Ala Leu Thr Pro Gly Leu Ser Trp Leu Leu
      130   135   140

Gln Arg Met Gln Ala Arg Ala Ala Gly Gln Thr Pro Lys Thr Ala Cys
145   150   155   160

Val Asp Ile Pro Gln Leu Leu Glu Glu Ala Val Gly Ala Gly Ala Pro
         165   170   175

Gly Ser Ala Gly Gly Val Leu Ala Ala Leu Leu Asp His Val Arg Ser
         180   185   190

Gly Ser Cys Phe His Ala Leu Pro Ser Pro Gln Tyr Phe Val Asp Phe
         195   200   205

Val Phe Gln Gln His Ser Ser Glu Val Pro Met Thr Leu Ala Glu Leu
         210   215   220

Ser Ala Leu Met Gln Arg Leu Gly Val Gly Arg Glu Ala His Ser Asp
225   230   235   240

His Ser His Arg His Arg Gly Ala Ser Ser Arg Asp Pro Val Pro Leu
         245   250   255

Ile Ser Ser Ser Asn Ser Ser Ser Val Trp Asp Thr Val Cys Leu Ser
         260   265   270

Ala Arg Asp Val Met Ala Ala Tyr Gly Leu Ser Glu Gln Ala Gly Val
         275   280   285

Thr Pro Glu Ala Trp Ala Gln Leu Ser Pro Ala Leu Leu Gln Gln Gln
         290   295   300

Leu Ser Gly Ala Cys Thr Ser Gln Ser Arg Pro Pro Val Gln Asp Gln
305   310   315   320

Leu Ser Gln Ser Glu Arg Tyr Leu Tyr Gly Ser Leu Ala Thr Leu Leu
          325   330   335

Ile Cys Leu Cys Ala Val Phe Gly Leu Leu Leu Leu Thr Cys Thr Gly
          340   345   350

Cys Arg Gly Val Thr His Tyr Ile Leu Gln Thr Phe Leu Ser Leu Ala
          355   360   365

Val Gly Ala Leu Thr Gly Asp Ala Val Leu His Leu Thr Pro Lys Val
          370   375   380

Leu Gly Leu His Thr His Ser Glu Glu Gly Leu Ser Pro Gln Pro Thr
385   390   395   400

Trp Arg Leu Leu Ala Met Leu Ala Gly Leu Tyr Ala Phe Phe Leu Phe
          405   410   415

Glu Asn Leu Phe Asn Leu Leu Leu Pro Arg Asp Pro Glu Asp Leu Glu
          420   425   430

Asp Gly Pro Cys Gly His Ser Ser His Ser His Gly Gly His Ser His
          435   440   445

Gly Val Ser Leu Gln Leu Ala Pro Ser Glu Leu Arg Gln Pro Lys Pro
    450   455   460

Pro His Glu Gly Ser Arg Ala Asp Leu Val Ala Glu Glu Ser Pro Glu
465   470   475   480

Leu Leu Asn Pro Glu Pro Arg Arg Leu Ser Pro Glu Leu Arg Leu Leu
            485   490   495

Pro Tyr Met Ile Thr Leu Gly Asp Ala Val His Asn Phe Ala Asp Gly
        500   505   510

Leu Ala Val Gly Ala Ala Phe Ala Ser Ser Trp Lys Thr Gly Leu Ala
        515   520   525

Thr Ser Leu Ala Val Phe Cys His Glu Leu Pro His Glu Leu Gly Asp
    530   535   540

Phe Ala Ala Leu Leu His Ala Gly Leu Ser Val Arg Gln Ala Leu Leu
545   550   555   560

Leu Asn Leu Ala Ser Ala Leu Thr Ala Phe Ala Gly Leu Tyr Val Ala
            565   570   575

Leu Ala Val Gly Val Ser Glu Glu Ser Glu Ala Trp Ile Leu Ala Val
            580   585   590

Ala Thr Gly Leu Phe Leu Tyr Val Ala Leu Cys Asp Met Leu Pro Ala
        595   600   605

Met Leu Lys Val Arg Asp Pro Arg Pro Trp Leu Leu Phe Leu Leu His
        610   615   620

Asn Val Gly Leu Leu Gly Gly Trp Thr Val Leu Leu Leu Leu Ser Leu
625   630   635   640

Tyr Glu Asp Asp Ile Thr Phe
                645

<210> 35
<211> 3246
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (478)..(1860)

<220>
<221> misc_feature
<222> (2530)..(2530)
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agtgtggttt tagtttttcc taagaagtgg cgtggtttgg ggctttatat ccgggaggag   60

catatgtacg caaatcctgg ggcgtttgca aacccggatc cggggcgtct ggccccatgc   120

ccgccgggc gtttgagggc tactgccacg cagcgtttct ggagcctgcc ggctggtgcc   180

ctggtggcct ttatctctgt ccccctttgt cctctttatc tcaggctctc caggaggccg   240

gggggcccac tccgcctatc gctcccctcg gctacgctgc cactccaatg ccccgcaggt   300

cgcgagctgc tgttctttcg aaggcgccgg agaaccaggg gcgtcccgcg ccacctctga   360

ctcggagcag cgccgagcac tgacgctccc gcccttgggc aaggacgcca gtgcgcccgc   420

gcgcgtccct ctgcgcggca gcccgtcgcg ggccctcaag gggaagccca ggccagg   477

atg gcc ccg ggt cgc gcg gtg gcc ggg ctc ctg ttg ctg gcg gcc gcc   525
Met Ala Pro Gly Arg Ala Val Ala Gly Leu Leu Leu Leu Ala Ala Ala
1   5   10   15

ggc ctc gga gga gtg gcg gag ggg cca ggg cta gcc ttc agc gag gat   573
Gly Leu Gly Gly Val Ala Glu Gly Pro Gly Leu Ala Phe Ser Glu Asp
           20   25   30

gtg ctg agc gtg ttc ggc gcg aat ctg agc ctg tcg gcg gcg cag ctc   621
Val Leu Ser Val Phe Gly Ala Asn Leu Ser Leu Ser Ala Ala Gln Leu
           35   40   45

cag cac ttg ctg gag cag atg gga gcc gcc tcc cgc gtg ggc gtc ccg   669
Gln His Leu Leu Glu Gln Met Gly Ala Ala Ser Arg Val Gly Val Pro
           50   55   60

gag cct ggc cag ctg cac ttc aac cag tgt tta act gct gaa gag atc   717
Glu Pro Gly Gln Leu His Phe Asn Gln Cys Leu Thr Ala Glu Glu Ile
65   70   75   80

ttt tcc ctt cat ggc ttt tca aat gct acc caa ata acc agc tcc aaa   765
Phe Ser Leu His Gly Phe Ser Asn Ala Thr Gln Ile Thr Ser Ser Lys
           85   90   95

ttc tct gtc atc tgt cca gca gtc tta cag caa ttg aac ttt cac cca   813
Phe Ser Val Ile Cys Pro Ala Val Leu Gln Gln Leu Asn Phe His Pro
               100   105   110

tgt gag gat cgg ccc aag cac aaa aca aga cca agt cat tca gaa gtt   861
Cys Glu Asp Arg Pro Lys His Lys Thr Arg Pro Ser His Ser Glu Val
               115   120   125

tgg gga tat gga ttc ctg tca gtg acg att att aat ctg gca tct ctc   909
Trp Gly Tyr Gly Phe Leu Ser Val Thr Ile Ile Asn Leu Ala Ser Leu
               130   135   140

ctc gga ttg att ttg act cca ctg ata aag aaa tct tat ttc cca aag   957
Leu Gly Leu Ile Leu Thr Pro Leu Ile Lys Lys Ser Tyr Phe Pro Lys
145   150   155   160

att ttg acc ttt ttt gtg ggg ctg gct att ggg act ctt ttt tca aat   1005
Ile Leu Thr Phe Phe Val Gly Leu Ala Ile Gly Thr Leu Phe Ser Asn
               165   170   175

gca att ttc caa ctt att cca gag gca ttt gga ttt gat ccc aaa gtc   1053
Ala Ile Phe Gln Leu Ile Pro Glu Ala Phe Gly Phe Asp Pro Lys Val
               180   185   190

gac agt tat gtt gag aag gca gtt gct gtg ttt ggt gga ttt tac cta   1101
Asp Ser Tyr Val Glu Lys Ala Val Ala Val Phe Gly Gly Phe Tyr Leu
               195   200   205

ctt ttc ttt ttt gaa aga atg cta aag atg tta tta aag aca tat ggt   1149
Leu Phe Phe Phe Glu Arg Met Leu Lys Met Leu Leu Lys Thr Tyr Gly
               210   215   220

cag aat ggt cat acc cac ttt gga aat gat aac ttt ggt cct caa gaa   1197
Gln Asn Gly His Thr His Phe Gly Asn Asp Asn Phe Gly Pro Gln Glu
225   230   235   240

aaa act cat caa cct aaa gca tta cct gcc atc aat ggt gtg aca tgc   1245
Lys Thr His Gln Pro Lys Ala Leu Pro Ala Ile Asn Gly Val Thr Cys
            245   250   255

tat gca aat cct gct gtc aca gaa gct aat gga cat atc cat ttt gat   1293
Tyr Ala Asn Pro Ala Val Thr Glu Ala Asn Gly His Ile His Phe Asp
            260   265   270

aat gtc agt gtg gta tct cta cag gat gga aaa aaa gag cca agt tca   1341
Asn Val Ser Val Val Ser Leu Gln Asp Gly Lys Lys Glu Pro Ser Ser
            275   280   285

tgt acc tgt ttg aag ggg ccc aaa ctg tca gaa ata ggg acg att gcc   1389
Cys Thr Cys Leu Lys Gly Pro Lys Leu Ser Glu Ile Gly Thr Ile Ala
         290   295   300

tgg atg ata acg ctc tgc gat gcc ctc cac aat ttc atc gat ggc ctg   1437
Trp Met Ile Thr Leu Cys Asp Ala Leu His Asn Phe Ile Asp Gly Leu
305   310   315   320

gcg att ggg gct tcc tgc acc ttg tct ctc ctt cag gga ctc agt act   1485
Ala Ile Gly Ala Ser Cys Thr Leu Ser Leu Leu Gln Gly Leu Ser Thr
                325   330   335

tcc ata gca atc cta tgt gag gag ttt ccc cac gag tta gga gac ttt   1533
Ser Ile Ala Ile Leu Cys Glu Glu Phe Pro His Glu Leu Gly Asp Phe
              340   345   350

gtg atc cta ctc aat gca ggg atg agc act cga caa gcc ttg cta ttc   1581
Val Ile Leu Leu Asn Ala Gly Met Ser Thr Arg Gln Ala Leu Leu Phe
            355   360   365

aac ttc ctt tct gca tgt tcc tgc tat gtt ggg cta gct ttt ggc att   1629
Asn Phe Leu Ser Ala Cys Ser Cys Tyr Val Gly Leu Ala Phe Gly Ile
           370   375   380

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ttg gtg ggc aac aat ttc gct cca aat att ata ttt gca ctt gct gga        1677
Leu Val Gly Asn Asn Phe Ala Pro Asn Ile Ile Phe Ala Leu Ala Gly
385             390             395             400


ggc atg ttc ctc tat att tct ctg gca gat atg ttt cca gag atg aat        1725
Gly Met Phe Leu Tyr Ile Ser Leu Ala Asp Met Phe Pro Glu Met Asn
                405             410             415


gat atg ctg aga gaa aag gta act gga aga aaa acc gat ttc acc ttc        1773
Asp Met Leu Arg Glu Lys Val Thr Gly Arg Lys Thr Asp Phe Thr Phe
                420             425             430


ttc atg att cag aat gct gga atg tta act gga ttc aca gcc att cta        1821
Phe Met Ile Gln Asn Ala Gly Met Leu Thr Gly Phe Thr Ala Ile Leu
                435             440             445


ctc att acc ttg tat gca gga gaa atc gaa ttg gag taa tagaaaatgg        1870
Leu Ile Thr Leu Tyr Ala Gly Glu Ile Glu Leu Glu
                450             455             460


aagatggtgt tgttaataaa ggcatttaat agataaaaac atctccaaaa aggattttga    1930


agctgatcct atttagttaa aaagataatt ttgctttcaa ctgtaggtcc agaaaactaa    1990


ttattggcat cagtctgtga aatagtccat tatttgttgt taaaaatgct tcaaaaggtt    2050


ttcagtgtca gtctgagatg cctggtatat aggagccttt gggaaatact tatttttcag    2110


tattccatgc atattagata tcaccatgaa gcaagagaca tgcattctat aatcatgtag    2170


acactcagac tcaggggaaa atacaagtta tatcctgaaa gcctttaaaa ctctatggta    2230


ggatcaaaga ttcaaatggt ttcagagagg ttttatttca attaatttgt tctagtgctt    2290


tcaagagcaa gtacatcaaa atgtagaagg taaaatgtat gcaacactaa tataaattat    2350
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tccaagtctt taaggagcca aagaaaaaaa agatttctca cagctttttg ttctgttttg   2410

tatttcaatt aggaacttgc agtattattt tgaaaaccat tctaaaataa taggagttag   2470

gaaataaata aagtttgct agccctgcta agttcaggct tagaggctta tcgctaagtn   2530

taaacttcac cagattccac gaaaagctgg atagctttt ttctgactta tgttgtggtt   2590

gcacccctca caaatggcag aacagtatgt aaagctggta acacctcggt ttcagtgcac   2650

catgtgtttg ctttgtgaag gtgaagaata tgttggttta gagaaagaaa ttggatgtaa   2710

ttttatgcaa tttacttta aagacaaaca taactattta gcagagaata ttttaataaa   2770

tgcaaaacaa cagctggact gctgtacatc aaggacagat taactggaaa acatatgttc   2830

cttatgtgtg attgagagcc attcagaaaa gacttccttt gtgttcagcc tatacttttc   2890

catatggtat accttgaaaa aaattagcac accatggtta tttttctacc ttttataaaa   2950

gacagagcct gtttactcat ttagaagata gagaaaattg gtctaaaatt gaacatccta   3010

gattcacact cccaagtcac ttaaggtgat ttgatggtga ggaaaatgat tgacaaagcc   3070

caacaatgat ctcaggaatt acattttcca acagaccaaa aaatgttttc atgtagcagc   3130

aatgcagatt tggtgaatat ttaatatata ttttagtatg tatttcactt tatgactgac   3190

aattaaaaaa tattgtttgg ccaaatagta aacacccttt tgaaaccatg aaaaaa       3246
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<210> 36
<211> 460
<212> PRT
<213> Homo sapiens

<400> 36

Met Ala Pro Gly Arg Ala Val Ala Gly Leu Leu Leu Leu Ala Ala Ala
1   5   10   15

Gly Leu Gly Gly Val Ala Glu Gly Pro Gly Leu Ala Phe Ser Glu Asp
            20   25   30

Val Leu Ser Val Phe Gly Ala Asn Leu Ser Leu Ser Ala Ala Gln Leu
            35   40   45

Gln His Leu Leu Glu Gln Met Gly Ala Ala Ser Arg Val Gly Val Pro
        50   55   60

Glu Pro Gly Gln Leu His Phe Asn Gln Cys Leu Thr Ala Glu Glu Ile
65   70   75   80

Phe Ser Leu His Gly Phe Ser Asn Ala Thr Gln Ile Thr Ser Ser Lys
                85   90   95

Phe Ser Val Ile Cys Pro Ala Val Leu Gln Gln Leu Asn Phe His Pro
                100   105   110

Cys Glu Asp Arg Pro Lys His Lys Thr Arg Pro Ser His Ser Glu Val
            115   120   125

Trp Gly Tyr Gly Phe Leu Ser Val Thr Ile Ile Asn Leu Ala Ser Leu
            130   135   140

Leu Gly Leu Ile Leu Thr Pro Leu Ile Lys Lys Ser Tyr Phe Pro Lys
145   150   155   160

Ile Leu Thr Phe Phe Val Gly Leu Ala Ile Gly Thr Leu Phe Ser Asn
                165   170   175

Ala Ile Phe Gln Leu Ile Pro Glu Ala Phe Gly Phe Asp Pro Lys Val
                180   185   190

Asp Ser Tyr Val Glu Lys Ala Val Ala Val Phe Gly Gly Phe Tyr Leu
                195   200   205

Leu Phe Phe Phe Glu Arg Met Leu Lys Met Leu Leu Lys Thr Tyr Gly
                210   215   220

Gln Asn Gly His Thr His Phe Gly Asn Asp Asn Phe Gly Pro Gln Glu
225   230   235   240

Lys Thr His Gln Pro Lys Ala Leu Pro Ala Ile Asn Gly Val Thr Cys
                245   250   255

Tyr Ala Asn Pro Ala Val Thr Glu Ala Asn Gly His Ile His Phe Asp
                260   265   270

Asn Val Ser Val Val Ser Leu Gln Asp Gly Lys Lys Glu Pro Ser Ser
                275   280   285

```
Cys Thr Cys Leu Lys Gly Pro Lys Leu Ser Glu Ile Gly Thr Ile Ala
    290             295             300

Trp Met Ile Thr Leu Cys Asp Ala Leu His Asn Phe Ile Asp Gly Leu
305             310             315             320

Ala Ile Gly Ala Ser Cys Thr Leu Ser Leu Leu Gln Gly Leu Ser Thr
            325             330             335

Ser Ile Ala Ile Leu Cys Glu Glu Phe Pro His Glu Leu Gly Asp Phe
            340             345             350

Val Ile Leu Leu Asn Ala Gly Met Ser Thr Arg Gln Ala Leu Leu Phe
            355             360             365

Asn Phe Leu Ser Ala Cys Ser Cys Tyr Val Gly Leu Ala Phe Gly Ile
    370             375             380

Leu Val Gly Asn Asn Phe Ala Pro Asn Ile Ile Phe Ala Leu Ala Gly
385             390             395             400

Gly Met Phe Leu Tyr Ile Ser Leu Ala Asp Met Phe Pro Glu Met Asn
            405             410             415

Asp Met Leu Arg Glu Lys Val Thr Gly Arg Lys Thr Asp Phe Thr Phe
            420             425             430
```

Phe Met Ile Gln Asn Ala Gly Met Leu Thr Gly Phe Thr Ala Ile Leu
       435   440   445

Leu Ile Thr Leu Tyr Ala Gly Glu Ile Glu Leu Glu
       450   455   460

<210> 37
<211> 1895
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (106)..(1725)

<400> 37
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ataggagcca gaacctgagc ccctaagcca ttcccctcac caatg atg ggg tcc cca   117
                                                    Met Gly Ser Pro
                                                      1

gtg agt cat ctg ctg gcc ggc ttc tgt gtg tgg gtc gtc ttg ggc tgg   165
Val Ser His Leu Leu Ala Gly Phe Cys Val Trp Val Val Leu Gly Trp
5   10   15   20

gta ggg ggc tca gtc ccc aac ctg ggc cct gct gag cag gag cag aac   213
Val Gly Gly Ser Val Pro Asn Leu Gly Pro Ala Glu Gln Glu Gln Asn
                 25   30   35

cat tac ctg gcc cag ctg ttt ggc ctg tac ggc gag aat ggg acg ctg   261

His Tyr Leu Ala Gln Leu Phe Gly Leu Tyr Gly Glu Asn Gly Thr Leu
           40   45   50

act gca ggg ggc ttg gcg cgg ctt ctc cac agc ctg ggg cta ggc cga   309
Thr Ala Gly Gly Leu Ala Arg Leu Leu His Ser Leu Gly Leu Gly Arg
      55   60   65

gtt cag ggg ctt cgc ctg gga cag cat ggg cct ctg act gga cgg gct   357
Val Gln Gly Leu Arg Leu Gly Gln His Gly Pro Leu Thr Gly Arg Ala
      70   75   80

gca tcc cca gct gca gac aat tcc aca cac agg cca cag aac cct gag   405
Ala Ser Pro Ala Ala Asp Asn Ser Thr His Arg Pro Gln Asn Pro Glu
85   90   95   100

ctg agt gtg gat gtc tgg gca ggg atg cct ctg ggt ccc tca ggg tgg   453
Leu Ser Val Asp Val Trp Ala Gly Met Pro Leu Gly Pro Ser Gly Trp
               105   110   115

ggt gac ctg gaa gag tca aag gcc cct cac cta ccc cgt ggg cca gcc   501
Gly Asp Leu Glu Glu Ser Lys Ala Pro His Leu Pro Arg Gly Pro Ala
              120   125   130

ccc tcg ggc ctg gac ctc ctt cac agg ctt ctg ttg ctg gac cac tca   549
Pro Ser Gly Leu Asp Leu Leu His Arg Leu Leu Leu Leu Asp His Ser
          135   140   145

ttg gct gac cac ctg aat gag gat tgt ctg aac ggc tcc cag ctg ctg   597
Leu Ala Asp His Leu Asn Glu Asp Cys Leu Asn Gly Ser Gln Leu Leu
      150   155   160

gtc aat ttt ggc ttg agc ccc gct gct cct ctg acc cct cgt cag ttt   645
Val Asn Phe Gly Leu Ser Pro Ala Ala Pro Leu Thr Pro Arg Gln Phe
165   170   175   180

gct ctg ctg tgc cca gcc ctg ctt tat cag atc gac agc cgc gtc tgc   693

```
          Ala Leu Leu Cys Pro Ala Leu Leu Tyr Gln Ile Asp Ser Arg Val Cys
                      185                 190             195


          atc ggc gct ccg gcc cct gca ccc cca ggg gat cta cta tct gcc ctg      741
          Ile Gly Ala Pro Ala Pro Ala Pro Pro Gly Asp Leu Leu Ser Ala Leu
                      200                 205             210


          ctt cag agt gcc ctg gca gtc ctg ttg ctc agc ctc cct tct ccc cta      789
          Leu Gln Ser Ala Leu Ala Val Leu Leu Leu Ser Leu Pro Ser Pro Leu
                      215                 220             225


          tcc ctg ctg ctg ctg cgg ctc ctg gga cct cgt cta cta cgg ccc ttg      837
          Ser Leu Leu Leu Leu Arg Leu Leu Gly Pro Arg Leu Leu Arg Pro Leu
                230                 235             240


          ctg ggc ttc ctg ggg gcc ctg gcg gtg ggc act ctt tgt ggg gat gca      885
          Leu Gly Phe Leu Gly Ala Leu Ala Val Gly Thr Leu Cys Gly Asp Ala
          245                 250                 255             260


          ctg cta cat ctg cta ccg cat gca caa gaa ggg cgg cac gca gga cct      933
          Leu Leu His Leu Leu Pro His Ala Gln Glu Gly Arg His Ala Gly Pro
                      265                 270             275


          ggc gga cta cca gag aag gac ctg ggc ccg ggg ctg tca gtg ctc gga      981
          Gly Gly Leu Pro Glu Lys Asp Leu Gly Pro Gly Leu Ser Val Leu Gly
                      280                 285             290


          ggc ctc ttc ctg ctc ttt gtg ctg gag aac atg ctg ggg ctt ttg cgg     1029
          Gly Leu Phe Leu Leu Phe Val Leu Glu Asn Met Leu Gly Leu Leu Arg
                      295                 300             305


          cac cga ggg ctc agg cca aga tgc tgc agg cga aaa cga agg aat ctc     1077
          His Arg Gly Leu Arg Pro Arg Cys Cys Arg Arg Lys Arg Arg Asn Leu
                310                 315             320


          gaa aca cgc aac ttg gat ccg gag aat ggc agt ggg atg gcc ctt cag     1125
```

```
Glu Thr Arg Asn Leu Asp Pro Glu Asn Gly Ser Gly Met Ala Leu Gln
325             330             335             340


ccc cta cag gca gct cca gag cca ggg gct cag ggc cag agg gag aag      1173
Pro Leu Gln Ala Ala Pro Glu Pro Gly Ala Gln Gly Gln Arg Glu Lys
                345             350             355


aac agc cag cac cca cca gct ctg gcc cct cct ggg cac caa ggc cac      1221
Asn Ser Gln His Pro Pro Ala Leu Ala Pro Pro Gly His Gln Gly His
                360             365             370


agt cat ggg cac cag ggt ggc act gat atc acg tgg atg gtc ctc ctg      1269
Ser His Gly His Gln Gly Gly Thr Asp Ile Thr Trp Met Val Leu Leu
            375             380             385


gga gat ggt cta cac aac ctc act gat ggg ctg gcc ata ggt gct gcc      1317
Gly Asp Gly Leu His Asn Leu Thr Asp Gly Leu Ala Ile Gly Ala Ala
        390             395             400


ttc tct gat ggc ttc tcc agc ggc ctc agt acc acc tta gcg gtc ttc      1365
Phe Ser Asp Gly Phe Ser Ser Gly Leu Ser Thr Thr Leu Ala Val Phe
405             410             415             420


tgc cat gag ctg ccc cac gaa ctg ggt gac ttt gcc atg ctg ctc cag      1413
Cys His Glu Leu Pro His Glu Leu Gly Asp Phe Ala Met Leu Leu Gln
                425             430             435


tca ggg ctg tcc ttt cgg cgg ctg ctg ctg ctg agc ctc gtg tct gga      1461
Ser Gly Leu Ser Phe Arg Arg Leu Leu Leu Leu Ser Leu Val Ser Gly
                440             445             450


gcc ctg gga ttg ggg ggt gca gtc ctg ggg gtg ggg ctc agc ctg ggc      1509
Ala Leu Gly Leu Gly Gly Ala Val Leu Gly Val Gly Leu Ser Leu Gly
            455             460             465


cct gtc ccc ctc act ccc tgg gtg ttt ggg gtc act gct ggg gtc ttc      1557
```

```
Pro Val Pro Leu Thr Pro Trp Val Phe Gly Val Thr Ala Gly Val Phe
    470             475             480
```

```
ctc tat gtg gcc ctt gtg gac atg cta cca gcc ctg ctt cgt cct ccg      1605
Leu Tyr Val Ala Leu Val Asp Met Leu Pro Ala Leu Leu Arg Pro Pro
485             490             495             500
```

```
gag ccc ctg cct acg ccc cat gtg ctc ctg cag ggg ctg ggg ctg ctg      1653
Glu Pro Leu Pro Thr Pro His Val Leu Leu Gln Gly Leu Gly Leu Leu
            505             510             515
```

```
ctg ggg ggc ggc ctc atg ctt gcc ata acc ctg ctg gag gag cgg cta      1701
Leu Gly Gly Gly Leu Met Leu Ala Ile Thr Leu Leu Glu Glu Arg Leu
            520             525             530
```

```
ctg ccc gtg acc act gag ggc tga tggggccagt ggaaaggggt cgggttgccc      1755
Leu Pro Val Thr Thr Glu Gly
            535
```

```
ttccttcccc ccaaccacag gaatggaggc gggacacagg gccagtagga gcaataggat      1815
```

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tttaataaac agaacccatc ccaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa      1875
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```
aaaaaaaaaa aaaaaaaaaa                                                   1895
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<210>  38
<211>  539
<212>  PRT
<213>  Homo sapiens
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<400>  38
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Met Gly Ser Pro Val Ser His Leu Leu Ala Gly Phe Cys Val Trp Val
1               5               10              15
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Val Leu Gly Trp Val Gly Gly Ser Val Pro Asn Leu Gly Pro Ala Glu
     20   25   30

Gln Glu Gln Asn His Tyr Leu Ala Gln Leu Phe Gly Leu Tyr Gly Glu
     35   40   45

Asn Gly Thr Leu Thr Ala Gly Gly Leu Ala Arg Leu Leu His Ser Leu
     50   55   60

Gly Leu Gly Arg Val Gln Gly Leu Arg Leu Gly Gln His Gly Pro Leu
65   70   75   80

Thr Gly Arg Ala Ala Ser Pro Ala Ala Asp Asn Ser Thr His Arg Pro
          85   90   95

Gln Asn Pro Glu Leu Ser Val Asp Val Trp Ala Gly Met Pro Leu Gly
         100   105   110

Pro Ser Gly Trp Gly Asp Leu Glu Glu Ser Lys Ala Pro His Leu Pro
         115   120   125

Arg Gly Pro Ala Pro Ser Gly Leu Asp Leu Leu His Arg Leu Leu Leu
     130   135   140

Leu Asp His Ser Leu Ala Asp His Leu Asn Glu Asp Cys Leu Asn Gly
145   150   155   160

Ser Gln Leu Leu Val Asn Phe Gly Leu Ser Pro Ala Ala Pro Leu Thr
            165   170   175

Pro Arg Gln Phe Ala Leu Leu Cys Pro Ala Leu Leu Tyr Gln Ile Asp
            180   185   190

Ser Arg Val Cys Ile Gly Ala Pro Ala Pro Ala Pro Pro Gly Asp Leu
            195   200   205

Leu Ser Ala Leu Leu Gln Ser Ala Leu Ala Val Leu Leu Leu Ser Leu
            210   215   220

Pro Ser Pro Leu Ser Leu Leu Leu Leu Arg Leu Leu Gly Pro Arg Leu
225   230   235   240

Leu Arg Pro Leu Leu Gly Phe Leu Gly Ala Leu Ala Val Gly Thr Leu
            245   250   255

Cys Gly Asp Ala Leu Leu His Leu Leu Pro His Ala Gln Glu Gly Arg
            260   265   270

His Ala Gly Pro Gly Gly Leu Pro Glu Lys Asp Leu Gly Pro Gly Leu
            275   280   285

Ser Val Leu Gly Gly Leu Phe Leu Leu Phe Val Leu Glu Asn Met Leu
            290   295   300

Gly Leu Leu Arg His Arg Gly Leu Arg Pro Arg Cys Cys Arg Arg Lys
305   310   315   320

Arg Arg Asn Leu Glu Thr Arg Asn Leu Asp Pro Glu Asn Gly Ser Gly
              325   330   335

Met Ala Leu Gln Pro Leu Gln Ala Ala Pro Glu Pro Gly Ala Gln Gly
              340   345   350

Gln Arg Glu Lys Asn Ser Gln His Pro Pro Ala Leu Ala Pro Pro Gly
              355   360   365

His Gln Gly His Ser His Gly His Gln Gly Gly Thr Asp Ile Thr Trp
    370   375   380

Met Val Leu Leu Gly Asp Gly Leu His Asn Leu Thr Asp Gly Leu Ala
385   390   395   400

Ile Gly Ala Ala Phe Ser Asp Gly Phe Ser Ser Gly Leu Ser Thr Thr
              405   410   415

Leu Ala Val Phe Cys His Glu Leu Pro His Glu Leu Gly Asp Phe Ala
              420   425   430

Met Leu Leu Gln Ser Gly Leu Ser Phe Arg Arg Leu Leu Leu Leu Ser
              435   440   445

Leu Val Ser Gly Ala Leu Gly Leu Gly Gly Ala Val Leu Gly Val Gly
    450   455   460

Leu Ser Leu Gly Pro Val Pro Leu Thr Pro Trp Val Phe Gly Val Thr
465   470   475   480

Ala Gly Val Phe Leu Tyr Val Ala Leu Val Asp Met Leu Pro Ala Leu
          485   490   495

Leu Arg Pro Pro Glu Pro Leu Pro Thr Pro His Val Leu Leu Gln Gly
        500   505   510

Leu Gly Leu Leu Leu Gly Gly Gly Leu Met Leu Ala Ile Thr Leu Leu
        515   520   525

Glu Glu Arg Leu Leu Pro Val Thr Thr Glu Gly
    530   535

<210> 39
<211> 2636
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (222)..(2186)

<400> 39

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aaaataatcc tctctagctc ccagtgcaca gtcaaagaat tttaaaaaca gggaactttg      60


taactgtgaa atactctcca ggatttaaaa ggctgtggag ctccagataa agaatcgttt     120


atctttcttc tgaagaaatt cctttggtta caagtttacc ccataaacgg caacacactc     180


acctccatcc aagacagact caaggtggag gaagcgtgga a atg tgc ttc cgg aca     236
                                             Met Cys Phe Arg Thr
                                               1               5


aag ctc tca gta tcc tgg gtg cca ttg ttt ctt cta ctc agc cgt gtt     284
Lys Leu Ser Val Ser Trp Val Pro Leu Phe Leu Leu Leu Ser Arg Val
                10               15                20


ttt tct act gag aca gac aaa ccc tca gcc cag gac agc aga agc cgt     332
Phe Ser Thr Glu Thr Asp Lys Pro Ser Ala Gln Asp Ser Arg Ser Arg
            25               30               35


ggg agt tca ggc caa ccg gca gac ctg cta cag gtt ctc tct gct ggt     380
Gly Ser Ser Gly Gln Pro Ala Asp Leu Leu Gln Val Leu Ser Ala Gly
        40               45               50


gac cac cca ccc cac aac cac tca aga agc ctc atc aaa aca ttg ttg     428
Asp His Pro Pro His Asn His Ser Arg Ser Leu Ile Lys Thr Leu Leu
    55               60               65


gag aaa act ggg tgc cca cgg agg aga aac gga atg caa gga gat tgc     476
Glu Lys Thr Gly Cys Pro Arg Arg Arg Asn Gly Met Gln Gly Asp Cys
70               75               80               85


aat ctg tgc ttt gaa cca gat gca cta tta cta ata gct gga gga aat     524
Asn Leu Cys Phe Glu Pro Asp Ala Leu Leu Leu Ile Ala Gly Gly Asn
                90               95               100


ttt gaa gat cag ctt aga gaa gaa gtg gtc cag aga gtt tct ctt ctc     572
Phe Glu Asp Gln Leu Arg Glu Glu Val Val Gln Arg Val Ser Leu Leu
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                105                   110                   115

ctt ctc tat tac att att cat cag gaa gag atc tgt tct tca aag ctc      620
Leu Leu Tyr Tyr Ile Ile His Gln Glu Glu Ile Cys Ser Ser Lys Leu
        120                   125                   130

aac atg agt aat aaa gag tat aaa ttt tac cta cac agc cta ctg agc      668
Asn Met Ser Asn Lys Glu Tyr Lys Phe Tyr Leu His Ser Leu Leu Ser
        135                   140                   145

ctc agg cag gat gaa gat tcc tct ttc ctt tca cag aat gag aca gaa      716
Leu Arg Gln Asp Glu Asp Ser Ser Phe Leu Ser Gln Asn Glu Thr Glu
150                   155                   160                   165

gat atc ttg gct ttc acc agg cag tac ttt gac act tct caa agc cag      764
Asp Ile Leu Ala Phe Thr Arg Gln Tyr Phe Asp Thr Ser Gln Ser Gln
                170                   175                   180

tgt atg gaa acc aaa acg ctg cag aaa aaa tct gga ata gtg agc agt      812
Cys Met Glu Thr Lys Thr Leu Gln Lys Lys Ser Gly Ile Val Ser Ser
                185                   190                   195

gaa ggt gct aat gaa agt acg ctt cct cag ttg gca gcc atg atc att      860
Glu Gly Ala Asn Glu Ser Thr Leu Pro Gln Leu Ala Ala Met Ile Ile
        200                   205                   210

act ttg tcc ctc cag ggt gtt tgt ctg gga caa gga aac ttg cct tcc      908
Thr Leu Ser Leu Gln Gly Val Cys Leu Gly Gln Gly Asn Leu Pro Ser
        215                   220                   225

cca gac tac ttt aca gaa tat att ttc agt tcc ttg aat cgt acg aat      956
Pro Asp Tyr Phe Thr Glu Tyr Ile Phe Ser Ser Leu Asn Arg Thr Asn
230                   235                   240                   245

acc ctc cgc cta tca gaa cta gac caa ctc ctc aac act ctc tgg acc     1004
Thr Leu Arg Leu Ser Glu Leu Asp Gln Leu Leu Asn Thr Leu Trp Thr
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	250		255		260

aga agt act tgt atc aaa aat gag aaa atc cat caa ttt caa agg aaa   1052
Arg Ser Thr Cys Ile Lys Asn Glu Lys Ile His Gln Phe Gln Arg Lys
        265   270   275

caa aac aac ata ata acc cat gat cag ggc tat tct aat ttc tct tca   1100
Gln Asn Asn Ile Ile Thr His Asp Gln Gly Tyr Ser Asn Phe Ser Ser
        280   285   290

tcc atg gaa aaa gag tct gag gat ggt cca gtt tcc tgg gat cag acc   1148
Ser Met Glu Lys Glu Ser Glu Asp Gly Pro Val Ser Trp Asp Gln Thr
        295   300   305

tgc ttc tct gct agg cag ctg gtg gag ata ttt cta cag aag ggc ctc   1196
Cys Phe Ser Ala Arg Gln Leu Val Glu Ile Phe Leu Gln Lys Gly Leu
310   315   320   325

tca ctc att tct aag gag gac ttt aag caa atg agt cca ggg atc atc   1244
Ser Leu Ile Ser Lys Glu Asp Phe Lys Gln Met Ser Pro Gly Ile Ile
             330   335   340

cag cag ctc ctc agc tgc tcc tgc cac tta ccc aag gac caa caa gca   1292
Gln Gln Leu Leu Ser Cys Ser Cys His Leu Pro Lys Asp Gln Gln Ala
        345   350   355

aag ctg cca cct acc act ctg gag aaa tac ggc tac agc acg gtg gct   1340
Lys Leu Pro Pro Thr Thr Leu Glu Lys Tyr Gly Tyr Ser Thr Val Ala
        360   365   370

gtc acc ctt ctc aca ctg ggc tcc atg ctg ggg aca gcg ctg gtc ctt   1388
Val Thr Leu Leu Thr Leu Gly Ser Met Leu Gly Thr Ala Leu Val Leu
        375   380   385

ttc cat agc tgt gag gag aac tac agg ctt atc tta cag ctg ttt gtg   1436
Phe His Ser Cys Glu Glu Asn Tyr Arg Leu Ile Leu Gln Leu Phe Val

	390				395				400				405		

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              390                   395                   400                   405

ggc ttg gcc gtc ggg aca ctg tct ggg gac gct ctg ctc cac ctt atc          1484
Gly Leu Ala Val Gly Thr Leu Ser Gly Asp Ala Leu Leu His Leu Ile
                410                   415                   420

cct cag gtt ctt ggt tta cat aag cag gaa gcc cca gaa ttt ggg cat          1532
Pro Gln Val Leu Gly Leu His Lys Gln Glu Ala Pro Glu Phe Gly His
                425                   430                   435

ttc cat gaa agc aaa ggt cat att tgg aaa ctg atg gga tta att gga          1580
Phe His Glu Ser Lys Gly His Ile Trp Lys Leu Met Gly Leu Ile Gly
                440                   445                   450

ggc atc cat gga ttt ttc ttg ata gaa aaa tgt ttt att ctt ctt gta          1628
Gly Ile His Gly Phe Phe Leu Ile Glu Lys Cys Phe Ile Leu Leu Val
            455                   460                   465

tca cca aat gac aag aaa agc cca gaa gat tca cag gca gct gaa atg          1676
Ser Pro Asn Asp Lys Lys Ser Pro Glu Asp Ser Gln Ala Ala Glu Met
470                   475                   480                   485

cct ata ggc agt atg aca gcc tcc aac aga aaa tgt aaa gcc att agc          1724
Pro Ile Gly Ser Met Thr Ala Ser Asn Arg Lys Cys Lys Ala Ile Ser
                490                   495                   500

ttg tta gca atc atg att ctg gtt ggg gac agc ctg cat aat ttt gca          1772
Leu Leu Ala Ile Met Ile Leu Val Gly Asp Ser Leu His Asn Phe Ala
                505                   510                   515

gat ggc cta gcc ata gga gca gcc ttc tca tca tca tcc gag tca gga          1820
Asp Gly Leu Ala Ile Gly Ala Ala Phe Ser Ser Ser Ser Glu Ser Gly
                520                   525                   530

gtg acc act acg att gct atc ttg tgt cat gaa atc cca cat gaa atg          1868
Val Thr Thr Thr Ile Ala Ile Leu Cys His Glu Ile Pro His Glu Met
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            535                540                545

gga gac ttt gcc gtg ctc tta agc tct gga ctt tct atg aag act gcc        1916
Gly Asp Phe Ala Val Leu Leu Ser Ser Gly Leu Ser Met Lys Thr Ala
550             555                560                565

atc ctg atg aat ttt ata agc tcc cta act gcc ttc atg gga tta tac        1964
Ile Leu Met Asn Phe Ile Ser Ser Leu Thr Ala Phe Met Gly Leu Tyr
            570                575                580

att ggc ctt tcc gtg tca gct gat cca tgt gtt caa gac tgg atc ttc        2012
Ile Gly Leu Ser Val Ser Ala Asp Pro Cys Val Gln Asp Trp Ile Phe
            585                590                595

aca gtc act gct ggg atg ttc tta tat tta tcc ttg gtt gaa atg ctt        2060
Thr Val Thr Ala Gly Met Phe Leu Tyr Leu Ser Leu Val Glu Met Leu
        600                605                610

cct gaa atg act cat gtt caa aca caa cga ccc tgg atg atg ttt ctc        2108
Pro Glu Met Thr His Val Gln Thr Gln Arg Pro Trp Met Met Phe Leu
        615                620                625

ctg caa aac ttt gga ttg atc cta ggt tgg ctt tct ctc ctg ctc ttg        2156
Leu Gln Asn Phe Gly Leu Ile Leu Gly Trp Leu Ser Leu Leu Leu Leu
630                635                640                645

gct ata tat gag caa aat att aaa ata taa gtgaggatct tcaacatctt        2206
Ala Ile Tyr Glu Gln Asn Ile Lys Ile
                650

tcaaaaatgc atttatatag tcttactttg tttctttcat tgcactctat aatgattttt     2266

aaattaagaa tttttatct taggcaaagt gtgtctcttt caattcatta acttattaat      2326

tttataatgc agttttattt ttggaaacat ataaatatca gactgtcctt aattgaaatt     2386
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ttgtctttgg tttccaacac catgatgaag ctcttgcttt ttaaaaagta gttagtaaat   2446

tctgcatgaa ttttagtaaa ctttaaaaaa tagatttttt ccctaagaaa gaatgtttgt   2506

agaatttaaa gtggacagat gcctgttggg gtaaaatcaa ctgcaacttt ttgatgttaa   2566

tttttttccc tgtgcaatta taaactataa gcaagttaag tgacaagcaa atgtaataaa   2626

gactagtttt   2636

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<212> PRT
<213> Homo sapiens

<400> 40

Met Cys Phe Arg Thr Lys Leu Ser Val Ser Trp Val Pro Leu Phe Leu
1   5   10   15

Leu Leu Ser Arg Val Phe Ser Thr Glu Thr Asp Lys Pro Ser Ala Gln
            20   25   30

Asp Ser Arg Ser Arg Gly Ser Ser Gly Gln Pro Ala Asp Leu Leu Gln
            35   40   45

Val Leu Ser Ala Gly Asp His Pro Pro His Asn His Ser Arg Ser Leu
        50   55   60

Ile Lys Thr Leu Leu Glu Lys Thr Gly Cys Pro Arg Arg Arg Asn Gly
65   70   75   80

Met Gln Gly Asp Cys Asn Leu Cys Phe Glu Pro Asp Ala Leu Leu Leu
            85   90   95

Ile Ala Gly Gly Asn Phe Glu Asp Gln Leu Arg Glu Glu Val Val Gln
        100   105   110

Arg Val Ser Leu Leu Leu Leu Tyr Tyr Ile Ile His Gln Glu Glu Ile
        115   120   125

Cys Ser Ser Lys Leu Asn Met Ser Asn Lys Glu Tyr Lys Phe Tyr Leu
     130   135   140

His Ser Leu Leu Ser Leu Arg Gln Asp Glu Asp Ser Ser Phe Leu Ser
145   150   155   160

Gln Asn Glu Thr Glu Asp Ile Leu Ala Phe Thr Arg Gln Tyr Phe Asp
        165   170   175

Thr Ser Gln Ser Gln Cys Met Glu Thr Lys Thr Leu Gln Lys Lys Ser
        180   185   190

Gly Ile Val Ser Ser Glu Gly Ala Asn Glu Ser Thr Leu Pro Gln Leu
        195   200   205

Ala Ala Met Ile Ile Thr Leu Ser Leu Gln Gly Val Cys Leu Gly Gln
     210   215   220

Gly Asn Leu Pro Ser Pro Asp Tyr Phe Thr Glu Tyr Ile Phe Ser Ser
225   230   235   240

Leu Asn Arg Thr Asn Thr Leu Arg Leu Ser Glu Leu Asp Gln Leu Leu
            245   250   255

Asn Thr Leu Trp Thr Arg Ser Thr Cys Ile Lys Asn Glu Lys Ile His
            260   265   270

Gln Phe Gln Arg Lys Gln Asn Asn Ile Ile Thr His Asp Gln Gly Tyr
            275   280   285

Ser Asn Phe Ser Ser Ser Met Glu Lys Glu Ser Glu Asp Gly Pro Val
    290   295   300

Ser Trp Asp Gln Thr Cys Phe Ser Ala Arg Gln Leu Val Glu Ile Phe
305   310   315   320

Leu Gln Lys Gly Leu Ser Leu Ile Ser Lys Glu Asp Phe Lys Gln Met
            325   330   335

Ser Pro Gly Ile Ile Gln Gln Leu Leu Ser Cys Ser Cys His Leu Pro
            340   345   350

Lys Asp Gln Gln Ala Lys Leu Pro Pro Thr Thr Leu Glu Lys Tyr Gly
            355   360   365

Tyr Ser Thr Val Ala Val Thr Leu Leu Thr Leu Gly Ser Met Leu Gly
    370   375   380

Thr Ala Leu Val Leu Phe His Ser Cys Glu Glu Asn Tyr Arg Leu Ile
385   390   395   400

Leu Gln Leu Phe Val Gly Leu Ala Val Gly Thr Leu Ser Gly Asp Ala
            405   410   415

Leu Leu His Leu Ile Pro Gln Val Leu Gly Leu His Lys Gln Glu Ala
        420   425   430

Pro Glu Phe Gly His Phe His Glu Ser Lys Gly His Ile Trp Lys Leu
        435   440   445

Met Gly Leu Ile Gly Gly Ile His Gly Phe Phe Leu Ile Glu Lys Cys
        450   455   460

Phe Ile Leu Leu Val Ser Pro Asn Asp Lys Lys Ser Pro Glu Asp Ser
465   470   475   480

Gln Ala Ala Glu Met Pro Ile Gly Ser Met Thr Ala Ser Asn Arg Lys
        485   490   495

Cys Lys Ala Ile Ser Leu Leu Ala Ile Met Ile Leu Val Gly Asp Ser
        500   505   510

Leu His Asn Phe Ala Asp Gly Leu Ala Ile Gly Ala Ala Phe Ser Ser
    515   520   525

Ser Ser Glu Ser Gly Val Thr Thr Thr Ile Ala Ile Leu Cys His Glu
    530   535   540

Ile Pro His Glu Met Gly Asp Phe Ala Val Leu Leu Ser Ser Gly Leu
545   550   555   560

Ser Met Lys Thr Ala Ile Leu Met Asn Phe Ile Ser Ser Leu Thr Ala
        565   570   575

Phe Met Gly Leu Tyr Ile Gly Leu Ser Val Ser Ala Asp Pro Cys Val
        580   585   590

Gln Asp Trp Ile Phe Thr Val Thr Ala Gly Met Phe Leu Tyr Leu Ser
        595   600   605

Leu Val Glu Met Leu Pro Glu Met Thr His Val Gln Thr Gln Arg Pro
    610   615   620

Trp Met Met Phe Leu Leu Gln Asn Phe Gly Leu Ile Leu Gly Trp Leu
625   630   635   640

Ser Leu Leu Leu Leu Ala Ile Tyr Glu Gln Asn Ile Lys Ile
        645   650

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<213> Homo sapiens

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<222> (43)..(1158)

<400> 41

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                                             Met Pro Gly Cys
                                              1


ccc tgc cct ggc tgt ggc atg gcg ggc cca agg ctc ctc ttc ctc act      102
Pro Cys Pro Gly Cys Gly Met Ala Gly Pro Arg Leu Leu Phe Leu Thr
 5               10              15                  20


gcc ctt gcc ctg gag ctc ttg gga agg gct ggg ggt tcc cag ccg gcc     150
Ala Leu Ala Leu Glu Leu Leu Gly Arg Ala Gly Gly Ser Gln Pro Ala
                25              30              35


ctc cgg agc cgg ggg act gcg acg gcc tgt cgc ctg gac aac aag gaa     198
Leu Arg Ser Arg Gly Thr Ala Thr Ala Cys Arg Leu Asp Asn Lys Glu
            40              45              50


agc gag tcc tgg ggg gct ctg ctg agc gga gag cgg ctg gac acc tgg     246
Ser Glu Ser Trp Gly Ala Leu Leu Ser Gly Glu Arg Leu Asp Thr Trp
            55              60              65


atc tgc tcc ctc ctg ggt tcc ctc atg gtg ggg ctc agt ggg gtc ttc     294
Ile Cys Ser Leu Leu Gly Ser Leu Met Val Gly Leu Ser Gly Val Phe
        70              75              80
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ccg ttg ctt gtc att ccc cta gag atg ggg acc atg ctg cgc tca gaa   342
Pro Leu Leu Val Ile Pro Leu Glu Met Gly Thr Met Leu Arg Ser Glu
85   90   95   100

gct ggg gcc tgg cgc ctg aag cag ctg ctc agc ttc gcc ctg ggg gga   390
Ala Gly Ala Trp Arg Leu Lys Gln Leu Leu Ser Phe Ala Leu Gly Gly
                105   110   115

ctc ttg ggc aat gtg ttt ctg cat ctg ctg ccc gaa gcc tgg gcc tac   438
Leu Leu Gly Asn Val Phe Leu His Leu Leu Pro Glu Ala Trp Ala Tyr
                120   125   130

acg tgc agc gcc agc cct ggt ggt gag ggg cag agc ctg cag cag cag   486
Thr Cys Ser Ala Ser Pro Gly Gly Glu Gly Gln Ser Leu Gln Gln Gln
                135   140   145

caa cag ctg ggg ctg tgg gtc att gct ggc atc ctg acc ttc ctg gcg   534
Gln Gln Leu Gly Leu Trp Val Ile Ala Gly Ile Leu Thr Phe Leu Ala
                150   155   160

ttg gag aag atg ttc ctg gac agc aag gag gag ggg acc agc cag gcc   582
Leu Glu Lys Met Phe Leu Asp Ser Lys Glu Glu Gly Thr Ser Gln Ala
165   170   175   180

ccc aac aaa gac ccc act gct gct gcc gcc gca ctc aat gga ggc cac   630
Pro Asn Lys Asp Pro Thr Ala Ala Ala Ala Ala Leu Asn Gly Gly His
                185   190   195

tgt ctg gcc cag ccg gct gca gag ccc ggc ctc ggt gcc gtg gtc cgg   678
Cys Leu Ala Gln Pro Ala Ala Glu Pro Gly Leu Gly Ala Val Val Arg
                200   205   210

agc atc aaa gtc agc ggc tac ctc aac ctg ctg gcc aac acc atc gat   726
Ser Ile Lys Val Ser Gly Tyr Leu Asn Leu Leu Ala Asn Thr Ile Asp
                215   220   225

aac ttc acc cac ggg ctg gct gtg gct gcc agc ttc ctt gtg agc aag   774
Asn Phe Thr His Gly Leu Ala Val Ala Ala Ser Phe Leu Val Ser Lys
   230   235   240

aag atc ggg ctc ctg aca acc atg gcc atc ctc ctg cat gag atc ccc   822
Lys Ile Gly Leu Leu Thr Thr Met Ala Ile Leu Leu His Glu Ile Pro
245   250   255   260

cat gag gtg ggc gac ttt gcc atc ctg ctc cgg gcc ggc ttt gac cga   870
His Glu Val Gly Asp Phe Ala Ile Leu Leu Arg Ala Gly Phe Asp Arg
          265   270   275

tgg agc gca gcc aag ctg caa ctc tca aca gcg ctg ggg ggc cta ctg   918
Trp Ser Ala Ala Lys Leu Gln Leu Ser Thr Ala Leu Gly Gly Leu Leu
        280   285   290

ggc gct ggc ttc gcc atc tgt acc cag tcc ccc aag gga gta gtt ggg   966
Gly Ala Gly Phe Ala Ile Cys Thr Gln Ser Pro Lys Gly Val Val Gly
        295   300   305

tgt tct ccc gct gca gag gag acg gca gcc tgg gtc ctg ccc ttc acc   1014
Cys Ser Pro Ala Ala Glu Glu Thr Ala Ala Trp Val Leu Pro Phe Thr
   310   315   320

tct ggc ggc ttt ctc tac atc gcc ttg gtg aac gtg ctc cct gac ctc   1062
Ser Gly Gly Phe Leu Tyr Ile Ala Leu Val Asn Val Leu Pro Asp Leu
325   330   335   340

ttg gaa gaa gag gac ccg tgg cgc tcc ctg cag cag ctg ctt ctg ctc   1110
Leu Glu Glu Glu Asp Pro Trp Arg Ser Leu Gln Gln Leu Leu Leu Leu
        345   350   355

tgt gcg ggc atc gtg gta atg gtg ctg ttc tcg ctc ttc gtg gat taa   1158
Cys Ala Gly Ile Val Val Met Val Leu Phe Ser Leu Phe Val Asp
        360   365   370

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ctttccctga tgccgacgcc cctgccccct gcagcaataa gatgctcgga ttcactctgt    1218

gaccgcatat gtgagaggca gagagggcga gtggctgcga gagagaatga gcctcccgcc    1278

agacaggagg gaggtgcgtg tggatgtatg tggtgtgcac atgtggccag aggtgtgtgc    1338

gcgagaccga cactgtgatc cctgtgctgg gtccggggcc cagtgtagcg cctgtcccca    1398

gccatgctgt ggttacctct ccttgccgcc ctgtcacctt cacctcctgg agtaagcagc    1458

gaggaagagc agcactggtc ccaagcagag gccttgccct gctgggaccc cgggagtgag    1518

agcagcccaa ggatcccagg gtgcagggaa ctccagagct gcccacctcc cactgccccc    1578

tcagcacaca cacagtcccc aggcggccta ggggccaagg ctggggcggc tttggtccct    1638

tttcctggcc cttccttccc cacttctaag ccaaagaaag gagaggcagg tgctcctgta    1698

ccccagcccc actcagcact gacagtcccc agctcctagt agtgagctgg gaggcgcttc    1758

ctaagaccct ttcctcaggg ctgccctggg agctcattcc tggccaacac gccctggcag    1818

caccagcagc tcttgccacc tccagctgcc aaacagcagc ctgccgggca gggagcagcc    1878

ccaggccaga gaggcctccc ggtccagctc agggatgctc ctgccagcac aggggccagg    1938

gactcctgga gcaggcacat agtgagcccg ggcagccctg cccagctcag gcccctttcc    1998

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aatgtgctcc ggcagagtgc tgaagccata atccccaacc atttcccttg gctgacgccc    2118

aggtactcag ctggcccact ccacagccag gcctggccct gcccttcacc gtggatgttt    2178

tcagaagtgg ccatcgagag gtctggatgg ttttatagca actttgctgt gattccgttt    2238
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gtatctgtaa atatttgttc tatagataag atacaaataa atattatcca cataaaaaaa   2298

aaaaaaaaaa a   2309

<210> 42
<211> 371
<212> PRT
<213> Homo sapiens

<400> 42

Met Pro Gly Cys Pro Cys Pro Gly Cys Gly Met Ala Gly Pro Arg Leu
1   5   10   15

Leu Phe Leu Thr Ala Leu Ala Leu Glu Leu Leu Gly Arg Ala Gly Gly
            20   25   30

Ser Gln Pro Ala Leu Arg Ser Arg Gly Thr Ala Thr Ala Cys Arg Leu
        35   40   45

Asp Asn Lys Glu Ser Glu Ser Trp Gly Ala Leu Leu Ser Gly Glu Arg
        50   55   60

Leu Asp Thr Trp Ile Cys Ser Leu Leu Gly Ser Leu Met Val Gly Leu
65   70   75   80

Ser Gly Val Phe Pro Leu Leu Val Ile Pro Leu Glu Met Gly Thr Met
                85   90   95

Leu Arg Ser Glu Ala Gly Ala Trp Arg Leu Lys Gln Leu Leu Ser Phe
          100   105   110

Ala Leu Gly Gly Leu Leu Gly Asn Val Phe Leu His Leu Leu Pro Glu
          115   120   125

Ala Trp Ala Tyr Thr Cys Ser Ala Ser Pro Gly Gly Glu Gly Gln Ser
          130   135   140

Leu Gln Gln Gln Gln Gln Leu Gly Leu Trp Val Ile Ala Gly Ile Leu
145   150   155   160

Thr Phe Leu Ala Leu Glu Lys Met Phe Leu Asp Ser Lys Glu Glu Gly
          165   170   175

Thr Ser Gln Ala Pro Asn Lys Asp Pro Thr Ala Ala Ala Ala Ala Leu
          180   185   190

Asn Gly Gly His Cys Leu Ala Gln Pro Ala Ala Glu Pro Gly Leu Gly
          195   200   205

Ala Val Val Arg Ser Ile Lys Val Ser Gly Tyr Leu Asn Leu Leu Ala
          210   215   220

Asn Thr Ile Asp Asn Phe Thr His Gly Leu Ala Val Ala Ala Ser Phe
225   230   235   240

Leu Val Ser Lys Lys Ile Gly Leu Leu Thr Thr Met Ala Ile Leu Leu
            245   250   255

His Glu Ile Pro His Glu Val Gly Asp Phe Ala Ile Leu Leu Arg Ala
            260   265   270

Gly Phe Asp Arg Trp Ser Ala Ala Lys Leu Gln Leu Ser Thr Ala Leu
            275   280   285

Gly Gly Leu Leu Gly Ala Gly Phe Ala Ile Cys Thr Gln Ser Pro Lys
        290   295   300

Gly Val Val Gly Cys Ser Pro Ala Ala Glu Glu Thr Ala Ala Trp Val
305   310   315   320

Leu Pro Phe Thr Ser Gly Gly Phe Leu Tyr Ile Ala Leu Val Asn Val
            325   330   335

Leu Pro Asp Leu Leu Glu Glu Glu Asp Pro Trp Arg Ser Leu Gln Gln
            340   345   350

Leu Leu Leu Leu Cys Ala Gly Ile Val Val Met Val Leu Phe Ser Leu
            355   360   365

Phe Val Asp
        370

116/116

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